ENGINEERING NEWS-RECORD

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A McGRAW-HILL PUBLICATION

E B POWER GS N
UNIVERSITY MICROFILMS IN
313 N 1 ST
ANN ARBOR MICH

These CHICAGO building case history reports PROVE WROUGHT IRON PIPE'S DURABILITY

Everyone who has the say-so on piping for corrosive services is looking for the answer to the big question, "Which piping material will last the longest?" The best place to find the *right answer* is in past service records.

Typical of what you'll find when you look into the past performance of wrought iron pipe is illustrated by the material's record in these Chicago buildings. In each installation, wrought iron pipe is living up to its longer life reputation . . . providing maximum piping economy because it lasts longer, at lower cost per year.

Today's high replacement and repair costs underscore, more than ever, that SERVICE LIFE, not initial costs, is the only sound guide to economical pipe selection.

Our bulletin, *Piping for Permanence,* gives complete details on how wrought iron is serving and saving in a variety of heating and plumbing installations. Write for your copy. You'll find it profitable reading.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Department: New York, N. Y.

BOARD OF TRADE BUILDING

ERECTED 1883, REBUILT 1929

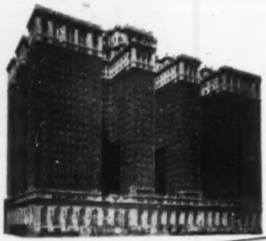
Wrought iron pipe's 46 years of excellent service in original building recommended its use for steam supply and return lines, hot and cold water lines, and drainage system in new building.

ROOKERY BUILDING

ERECTED 1888

Complete wrought iron piping installation still in service. Inspection revealed that the pipe is still going strong.

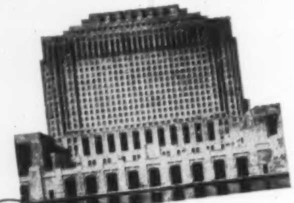
CONRAD HILTON HOTEL



ERECTED 1928

Specifications called for wrought iron pipe in soil, waste, vent, stack, fire, vacuum sweeper, and water (hot, cold, and drinking) lines.

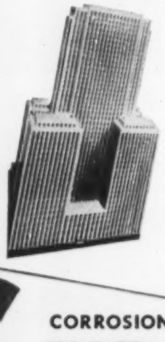
DAILY NEWS BUILDING



ERECTED 1928

Wrought iron pipe was installed in hot and cold water lines, heating return lines, and soil, waste, vent and downspout lines.

FIELD BUILDING



ERECTED 1933

Wrought iron pipe was used for soil, waste, and vent lines. This same protection was extended to all hot water risers and branches.

ITS LONGER LIFE
MEANS GREATER
ECONOMY

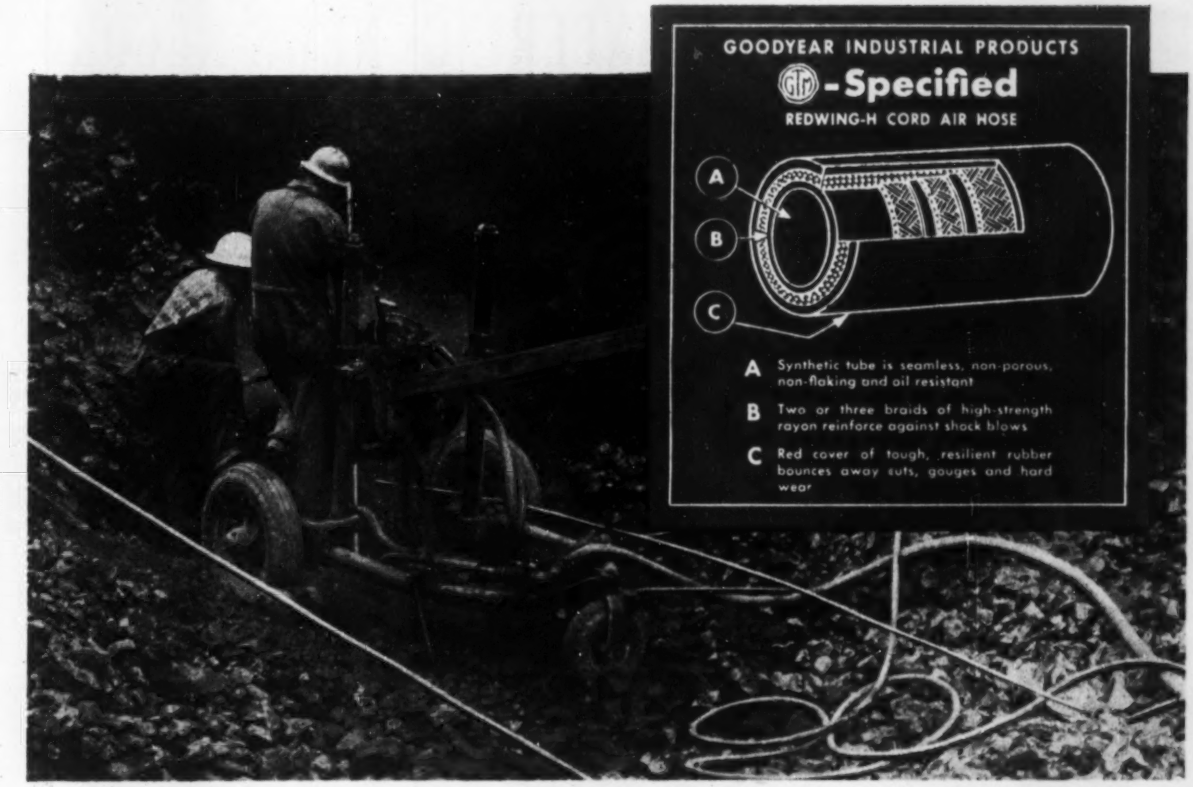
BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY STEEL PRODUCTS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GTM -Specified
REDWING-H CORD AIR HOSE
A
B
C
A Synthetic tube is seamless, non-porous, non-flaking and oil resistant
B Two or three braids of high-strength rayon reinforce against shock blows
C Red cover of tough, resilient rubber bounces away cuts, gouges and hard wear

Redwing—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

ROCK-BOTTOM DRILLING COSTS
come with REDWING-H Air Hose

Ultimate cost — based on the service rendered per dollar expended — not initial price, is the true measure of hose value. That's why Redwing-H Cord Air Hose deserves your first and full consideration. You'll find it gives you the lowest ultimate cost under the toughest conditions found in mines, quarries or on any construction job.

And that's because this hose is designed to its job by the G.T.M. —Goodyear Technical Man. The bright, red cover is of a soft, cut-resistant stock that effectively cushions against the sharpest blows and most jagged rock. Under this wear-resistant cushion are multiple, vertical braids of double end rayon cords to handle working pressures up to 300 psi with extreme flexibility. All this plus a seamless, nonporous, non-flaking, oil-resistant tube.

See the G.T.M., or your Goodyear Distributor, on how to get the most for your dollar with Redwing-H Air Hose or any of the many other types of hose specifically designed for use in excavation and construction work. Or write to:

Goodyear, Industrial Products
Division, Akron 16, Ohio.

Your Goodyear Distributor *can quickly supply you with Hose, Flat Belts, V-Belts, Packing or Rolls. Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."*

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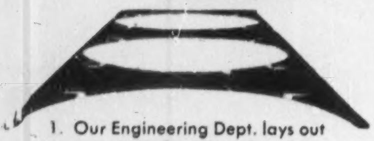
BECAUSE THEY FIT PERFECTLY!



1. Our Engineering Dept. lays out complete flooring plan from your floor plan, sketch or overall dimensions.
2. A shop drawing showing layout of sizes, shape and cut-outs for obstructions is submitted for approval before fabrication.

3. Each panel is carefully checked by our inspectors before shipment and is clearly marked for quick installation.
4. We furnish erection drawings showing location of marked panels.

These are only a few of the services that insure perfect fit when you specify IRVING GRATING.

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Telephones: New York - LOngacre 4-3000; Chicago - WHitehall 4-7900; San Francisco - DOuglas 2-4600
Washington - REpublic 7-6630

Number of copies of th's issue printed 63,890

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PUBLISHER

August 26, 1954 **ENGINEERING NEWS-RECORD** **Vol. 153, No. 9**

Member ABC and ABP

Published weekly by McGraw-Hill Publishing Company, James H. McGraw (1860-1948), Founder. **Publication Office, 99-129 North Broadway, Albany 1, N. Y.**

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N.Y. Donald C. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blacburn, Jr., Vice-President and Director of Circulation.

Subscriptions: Address correspondence to Engineering News-Record—Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

Subscriptions are solicited only from persons with an identifiable commercial or professional interest in construction and building. Position and company connection must be indicated on subscription orders.

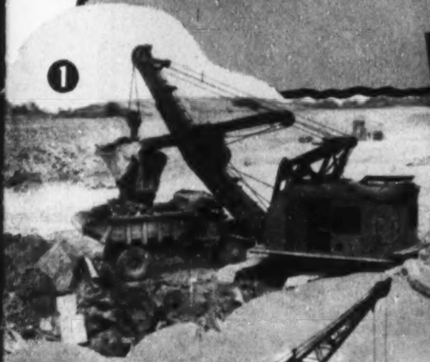
Single copies 35¢. Subscription rates—United States and possessions, $6.00 a year; $9.00 for two years; $12.00 for three years. Canada $8.00 a year; $12.00 for two years; $16.00 for three years. Other Western Hemisphere and the Philippines, $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries, $20.00 a year; $30.00 for two years; $40.00 for three years. Entered as second class matter October 29, 1936, at the Post Office at Albany, N. Y., under Act of Mar. 3, 1879. Printed in U. S. A. Copyright 1954 by McGraw-Hill Publishing Co., Inc.—All Rights Reserved.

Over half of the Shovel Equipment on the WEST VIRGINIA TURNPIKE was NORTHWEST

More NORTHWESTS than any other make (over 100) on the NEW YORK THRUWAY!

and NOW! already over 50 NORTHWESTS on the OHIO TURNPIKE!

(more than any other make)



① One of several Northwests owned by Ralph Meyers Construction Co. in a heavy rock cut.

② A Northwest Truck Crane pours concrete for D. W. Winkelman at Boardman Branch near Youngstown.

③ R.B. Potashnick grading near Ravenna.

④ A Peter Kiewit Sons Co. and Condon Cunningham Co. Northwest pouring overpass piers at Ohmstead Falls.

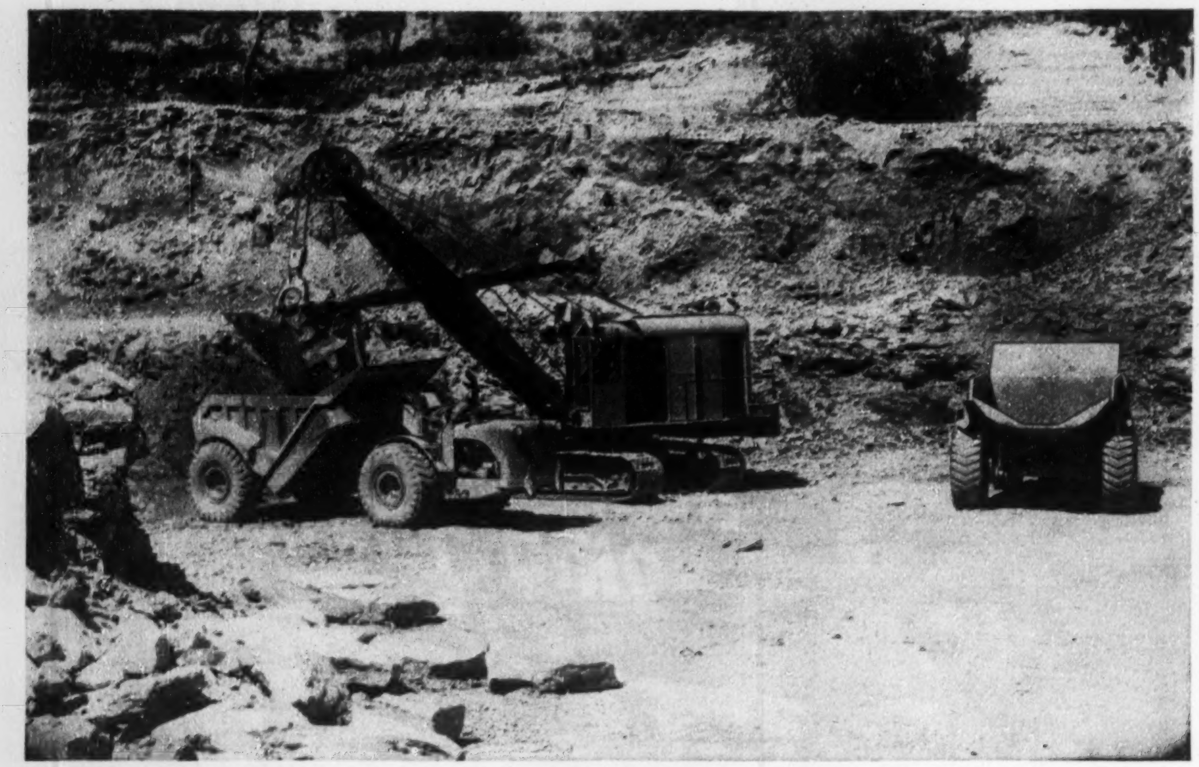
⑤ A Northwest Dragline owned by Terry & Wright handling some of the drainage work at Wauseon, Ohio.

NORTHWEST ENGINEERING COMPANY
1502 Field Bldg., 135 South LaSalle Street
Chicago 3, Illinois

Has Your Shovel Stood the ROCK TEST

NORTHWEST

CRAWLER and TRUCK MOUNTED SHOVELS • CRANES • DRAGLINES • PULLSHOVELS



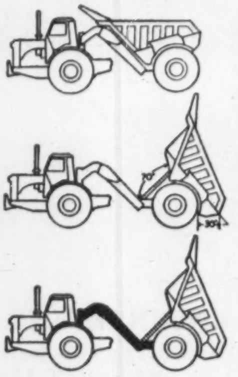
Four TR-200's work up to 460 hours a month . . . average only 4 hours down time

In less than a year, the George W. Kerford Quarry Company, Atchison, Kansas, put 3,828 hours of work time on each of their four Allis-Chalmers TR-200 Rock Wagons. They piled up 460 hours a month over one five-month period. During the year, service down time for each unit averaged only 4 hours a month . . . this means that each rock wagon was on the job over 98 percent of working time!

The TR-200's have been hauling quarry stone from the pit to a crushing plant 1½ miles away. Loads average 16 tons and each cycle is completed in 14 min. Fuel consumption has been about 3¼ gal per hour with no oil needed between changes.

George E. Kerford states, "We like the TR's maneuverability and easy control, which makes it possible for any good truck driver to learn to drive the outfit quickly. The wagon body is well constructed and cleans easily and completely. We find that most parts needing frequent maintenance and repair are easily accessible."

HERE ARE THE FEATURES BEHIND THIS OUTSTANDING RECORD



Big bowl top makes excellent target for shovel or dragline operator, helps loading under bins or chutes.

High power-to-load ratio of 16 hp per yard of capacity speeds hauling, helps on steep grades.

Maximum lift angle of 70 degrees speeds dumping of any type material. Big opening and "bathtub" design slide loads out fast at minimum dump angles.

Dumps 30 in. back of rear wheels to put entire load over banks or into hoppers.

Wheel base stays fixed during dumping cycle for greater safety on banks, accuracy in spotting loads.

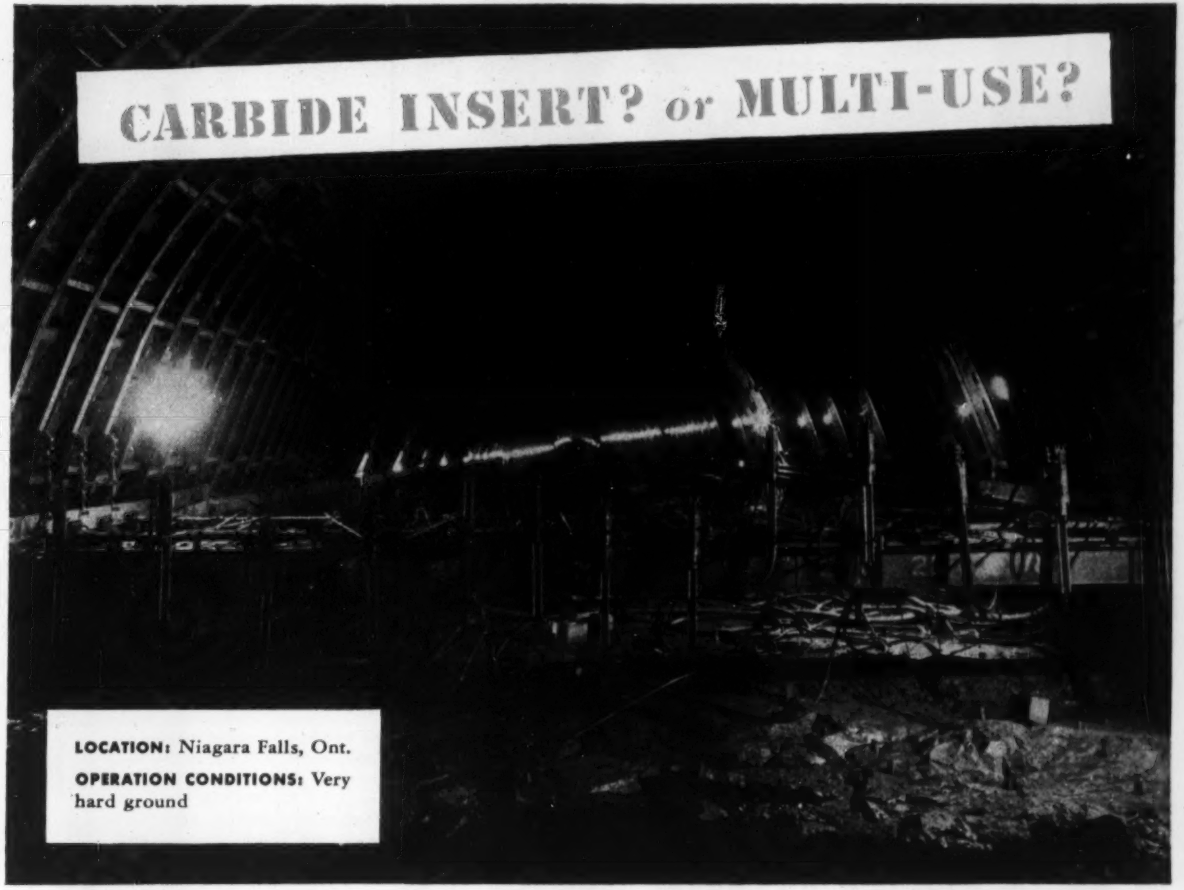
Four-wheel air brakes allow full control, safer dumping over banks.

Hydraulic control system raises or lowers bowl while traveling, gets TR-200 into position sooner.

176 hp engine — 5 speeds forward to 21.6 mph, reverse 2.5 — 11 yd struck, 15 yd heaped, 18 tons

Write for complete catalogs or ask your Allis-Chalmers dealer for a demonstration

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.



LOCATION: Niagara Falls, Ont.

OPERATION CONDITIONS: Very hard ground

TIMKEN® carbide insert bits used on $343,000,000 Ontario Hydro Project

... help set high record for one week of drilling!

IN drilling operations at the $343,000,000 Ontario Hydro project at Niagara Falls, Ontario, Timken® carbide insert bits are used. Due to faster drilling and fewer bit changes, drillers set a high record for one week of tunnel drilling, removing 26,696 cu. yds. of rock.

Timken carbide insert bits always give highest speed through hard and abrasive ground. They're most economical for constant-gage holes, small diameter blast holes, extremely deep holes.

But they're *not* always the best for all your drilling problems!

For ordinary ground, Timken multi-use bits are most economical. With correct and controlled drilling, they'll give the lowest cost per foot of hole when full increments of steel can be drilled.

And remember, both Timken carbide insert and multi-use bits are interchangeable in the same thread series. A wide range of different Timken bits fit the same drill steel. You can change bits quickly, easily as the ground changes—right on the job!

Both Timken carbide and multi-use bits are made from electric furnace Timken fine alloy steel and have special shoulder unions, originated by the Timken Company, that protect threads from drilling impact.

To find out the bit type most suited to your drilling needs, call on the Timken Rock Bit Engineering Service. Write The Timken Roller Bearing Company, Rock Bit Division, Canton 6, Ohio. Cable address: "TIMROSCO".

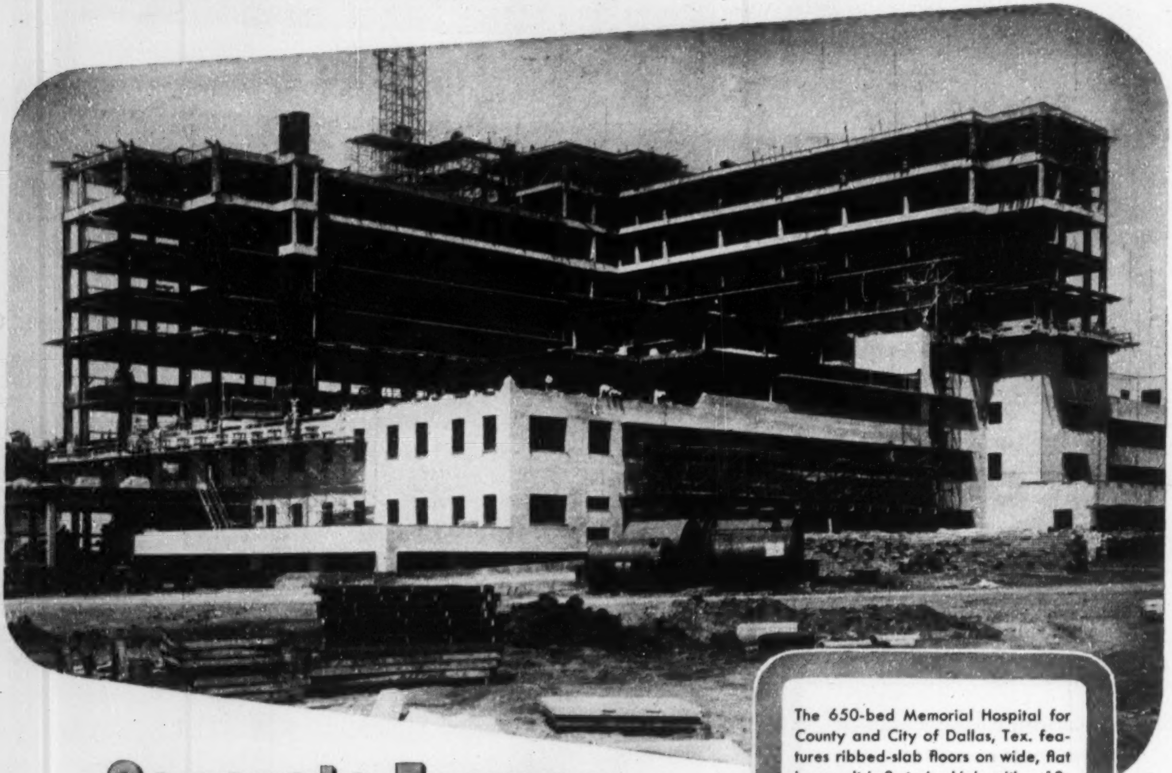
Timken threaded multi-use rock bit

Timken threaded carbide insert rock bit

your best bet
for the best bit
... for every job

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.



The 650-bed Memorial Hospital for County and City of Dallas, Tex. features ribbed-slab floors on wide, flat beams. It is 8 stories high, with a 13-story center section. Architects: Dewitt and Swank; structural engineer: R. L. Rolfe; contractor: Robert E. McKee. All are from Dallas.

Aerial view below shows the hospital against Dallas skyline. Excavation in foreground is for the Southwestern Medical School Basic Science Building. It also is designed for reinforced concrete frame and floor construction.

Concrete Frames and Floors

. . . quality construction for modern hospitals

Architects and engineers can provide critically-needed hospitals faster and more economically if they design them for reinforced concrete frame and floor construction. That's why more and more hospitals are being built that way.

With reinforced concrete, frame and floor construction proceeds simultaneously. Walls can be finished and such facilities as plumbing, heating and electricity can be installed as the structural work advances. No need to wait until the entire frame is erected. So you save considerable time.

Moreover, competitive bids and cost analyses show you can save up to 40% on frame and floor costs with reinforced concrete. And durable, sturdy, firesafe concrete construction renders long years of service at little maintenance expense. The very practical result is ***low annual cost***—the only realistic measure of the cost of any building.

For more information about time-saving, economical concrete frame and floor construction write for free booklets, distributed only in U. S. and Canada. Address Dept. 8d-17.

PORTLAND CEMENT ASSOCIATION, 33 W. Grand Ave., Chicago 10, Ill.
A national organization to improve and extend the uses of portland cement
and concrete through scientific research and engineering field work

AN INTEGRATED PRODUCER IS A SUPPLIER YOU CAN RELY UPON

United States Pipe and Foundry Company is a wholly integrated producer of cast iron pressure pipe—from our mines and blast furnaces to our strategically located pipe plants.

This should be of major interest to a pipe buyer since it means: (1) complete independence of action in supplying your needs as we produce our own raw materials, (2) greater assurance of continuity of service at all times, and (3) undivided control of quality at every step in pipe production from the ground up.

In addition to being able to control the quality of pipe-making raw materials at their sources, our Quality Control of pipe production gives further assurance to customers that the quality level of U. S. Cast Iron Pipe is in excess of standard specifications. Our pipe is produced to *our own* quality control specifications, more exacting than the established specifications under which cast iron pipe is normally purchased.

U.S.
cast iron
PIPE

Ore and Coal Mines **Coke Ovens** **Blast Furnaces** **Pipe Plants**

U. S. PIPE & FOUNDRY COMPANY

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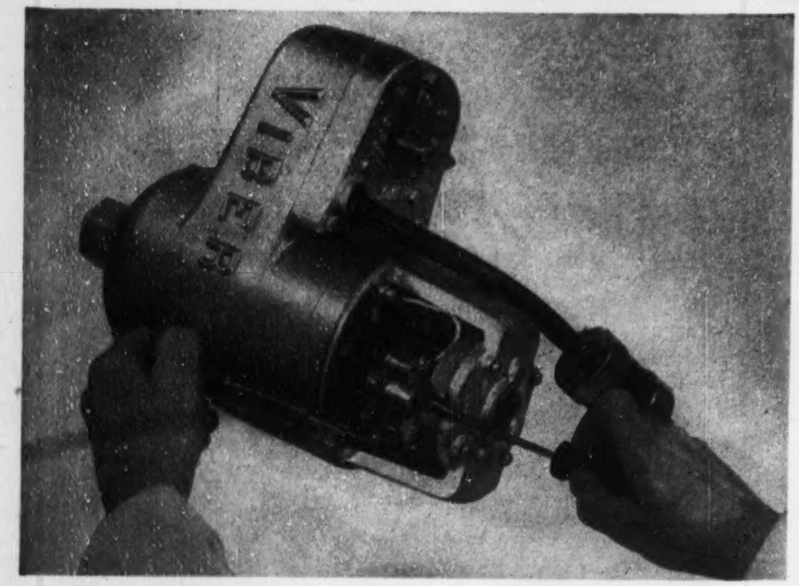
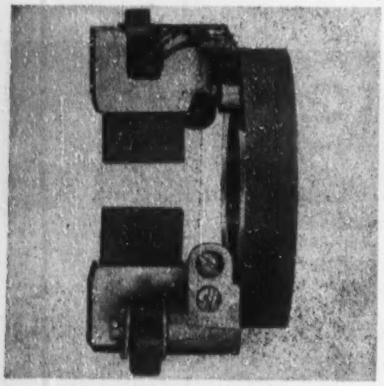
A wholly integrated producer . . . from mines and blast furnaces to finished pipe.



BETTER COMMUTATION results from increased brush tension on VIBER'S new brush holder assembly. The strong adjustable flat spiral spring keeps brush tension at the 36 ounce factory setting, or more. You can easily adjust brush tension with only a screwdriver, after removing cover.

80% more brush tension extends Viber brush and commutator life

You will get better brush and commutator life and performance from the 36 ounce adjustable brush tension and ⅝ inch ground clearance of VIBER'S new brush holder assembly. A larger (1⅞ inch o.d.) shielded bearing will give you increased bearing life and further reduce maintenance and down time. In addition, you can extend the savings from this improved construction to your present VIBER vibrators. The new assembly fits VIBER motors manufactured back to 1942. With the convenient conversion kit you can make the change easily right in your own shop.



WIDE BRUSH CLEARANCE from frame side of ⅝ inch phenolic ring minimizes carbon dust accumulation and any tendency to arc to ground.

- **Brush holder** — Machined bronze casting, with strong, adjustable flat spiral spring. It accurately positions the brush, lets it move freely, and maintains full tension. This reduces arcing and burning, increasing brush and commutator life.
- **Insulating ring**—strong laminated phenolic ring firmly supports the two brush holders. Its ⅝ inch thickness provides extra clearance to prevent arcing to ground.
- **Bearing** — Twenty percent larger, with twice the load rating. This bearing and the beefed up aluminum casting supporting the brush holder assembly have ample mechanical strength to resist misalignment from rough handling in the field.
- **Conversion kit** — For better commutation and lower maintenance on your present VIBER Vibrators. Excepting only the laboratory Model 11, you can use the new assembly on all VIBER motors made since 1942 — Models E, SE, 26, 27, 28, and 31.

For further information on the new brush holder or any of the complete VIBER line of external and rubber tipped internal vibrators, contact your authorized distributor or VIBER COMPANY, 726 South Flower St., Burbank, Calif.

VIBER CO

CONCRETE VIBRATORS SINCE 1931

READER COMMENT

Heavy Concrete

SIR: Your article, "Barytes: Handle with care," (ENR May 13, 1954, p. 36) was an interesting discussion on the efficiency of heavy concrete for shielding people from atomic radiation. The article stated that when barytes are used the resulting heavy concrete has a density of 218 lb per cu ft. Also that high density concrete—usually made with a coarse aggregate of iron or steel punchings—is subject to separation and segregation during handling.

I wish to call attention to two facts: (1) Heavy concrete of much greater density than 218 lb per cu ft can be made with steel punchings and (2) there is no necessity for separation or segregation in handling. In designing and building the heavy concrete shield for the University of Chicago's large cyclotron project in 1950, 175 cu yd of this material was used. It was cast in the form of interlocking blocks of complex shapes to make a wall 12 ft thick (ENR July 26, 1951, p. 65). The material had a density exceeding 300 lb per cu ft, thus requiring only one-half the thickness of ordinary concrete.

One point of interest was the special method of placing the materials to avoid segregation. The metal punchings were not placed in the mixer in order to avoid both damage to the machine and separation of the materials in the mix. Only the sand, cement, water and admixture were placed in the mixer. After mixing, this liquid was placed in the forms in a layer about 6 in. deep. The necessary quantity of metal punchings was spread on top of this material and consolidated into the layer by vibration. This was repeated until each complete member was constructed.

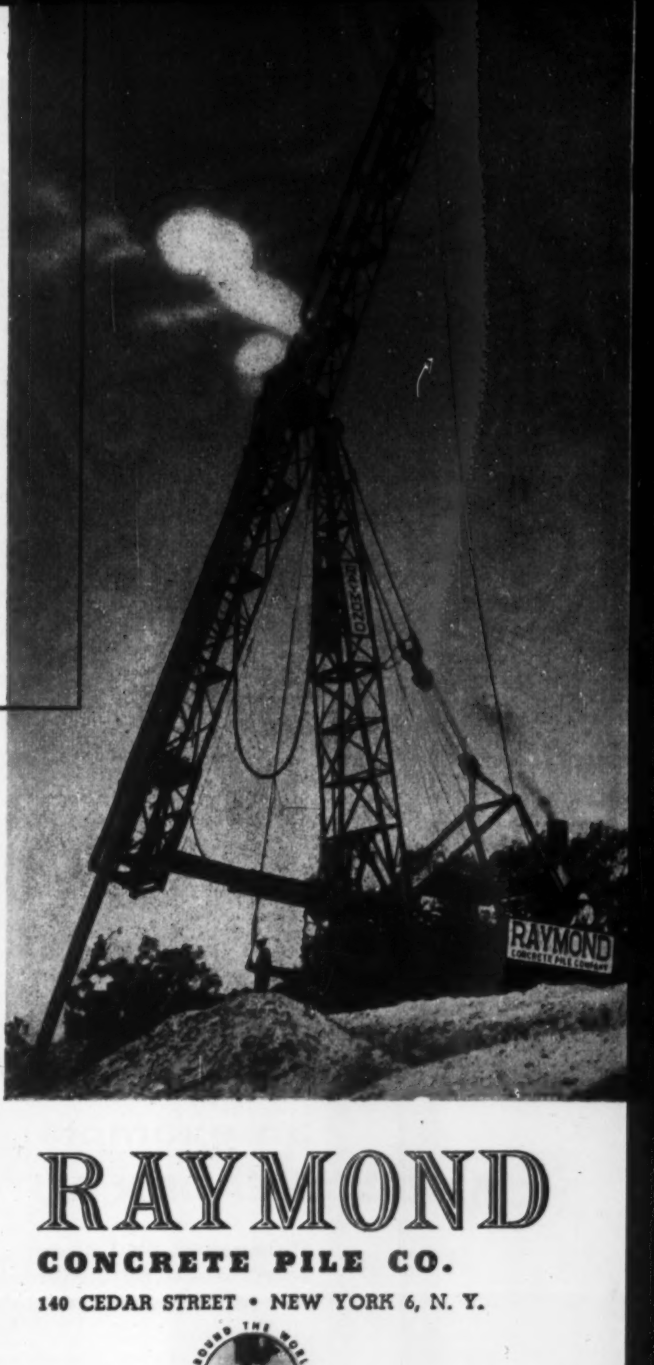
Surprisingly, maintaining the required proportions of steel punchings to liquid mix was not difficult to control. Careful checking was necessary at first but the workmen soon became sufficiently skilled in judging the proper amount of punchings so that frequent checking was not needed. One distinct advantage of this method is that the large form pressures which may be built up by pumping liquid mix under pressure into the voids of previously placed aggregates are reduced. This saves the cost of more expensive forms or prevents the distortion of ordinary forms.

Incidentally, 300 lb per cu ft is by no means the highest density obtainable in heavy concrete made with steel

(Continued on page 12)

RAYMOND

. . . specialists in tough jobs!



During the 57 years of Raymond Concrete Pile Company's operations, many tough jobs have come our way. Some merely took hard work and a little ingenuity to solve. Others were unsolvable with the equipment and methods available . . . so we developed new equipment and methods to meet the special requirements.

Engineering feats that once were out of the ordinary are now everyday occurrences for Raymond's men and machines. We like to feel that this is one of the reasons for our continuous growth. We always welcome the challenge of a tough job.

RAYMOND
CONCRETE PILE CO.
140 CEDAR STREET • NEW YORK 6, N. Y.

AROUND THE WORLD
FOUNDED 1897

Branch Offices in Principal Cities of the United States, Canada, Central and South America

RAYMOND'S DOMESTIC SERVICES . . . SOIL INVESTIGATIONS • FOUNDATION CONSTRUCTION • HARBOR AND WATERFRONT IMPROVEMENTS • PRESTRESSED CONCRETE CONSTRUCTION • CEMENT-MORTAR LINING OF WATER, OIL AND GAS PIPELINES, IN PLACE

RAYMOND'S SERVICES ABROAD . . .
IN ADDITION TO THE ABOVE, ALL TYPES OF GENERAL CONSTRUCTION

an example: $10,000 saved with the new
AMSCO LEADER AUTOMATIC ELECTRIC WELDER

Pioneered by Leader . . .
Purchased by Amsco . . .
Proved by years of field use . . .

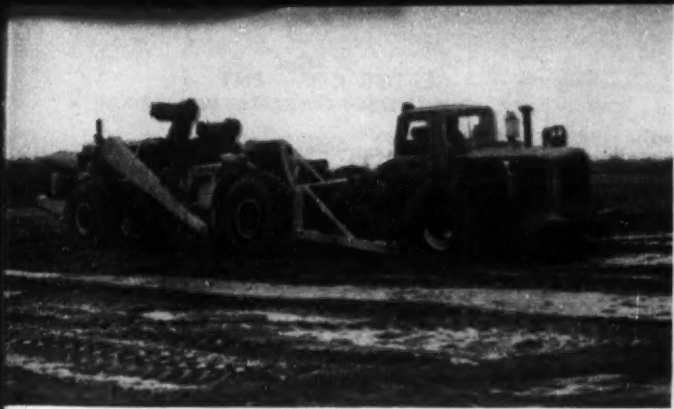
Maybe you've seen it work . . . know from firsthand experience the economies it effects. It's not new to mining and construction superintendents—*they proved it.* But in case you don't know about it, here's what it meant to one construction outfit.

Operating five large track-type tractors each with 12 bottom rollers, 4 carrier rollers, 156 track links, 78 grouser pads, 2 idlers, 2 sprockets and one dozer blade, replacement cost was figured to be approximately $13,800. Rebuilding these parts with the Amsco Leader cost approximately $3,700 or a saving of about $10,000. Plus the fact that the rebuilt parts gave nearly double the service life of new parts.

See your local Amsco Distributor, today. Ask him for complete details on the Amsco Leader. Ask for a demonstration. Take home the descriptive literature. See for yourself how a new Amsco Leader can save you thousands of replacement dollars.

Brake Shoe

AMERICAN MANGANESE STEEL DIVISION
Chicago Heights, Ill.



186 hp Tournatractor on 21.00 x 25 low-pressure tires push-loads C Tournapull . . . takes 25 seconds to heap 11½ pay yards of clay.

"C" takes 15 seconds to reach fill 450′ from cut. Spread over 100′ takes 36 seconds . . . complete 1080′ cycle averages 2.1 minutes.

4125 yds. of clay-loam daily puts contract 18% ahead

E. J. Button & Sons, Chittenango, New York, had 32 working days in which to move 110,000 yards for a 55-acre athletic field for the high school at Verona, N.Y. Also included on plot was a parking lot.

To meet daily production schedule of 3,500 yards, contractors brought in 3 C Tournapulls, a Tournatractor, and a 148 hp crawler-tractor. At the start of the job, stripping, stockpiling topsoil, and rough grading were handled simultaneously on a "T" shaped cycle diagrammed at right. With this efficient work pattern "C's" delivered 16,500 pay yards in 4 days. Daily fleet output totaled 4,125 pay yards . . . 625 yards (18%) more than required.

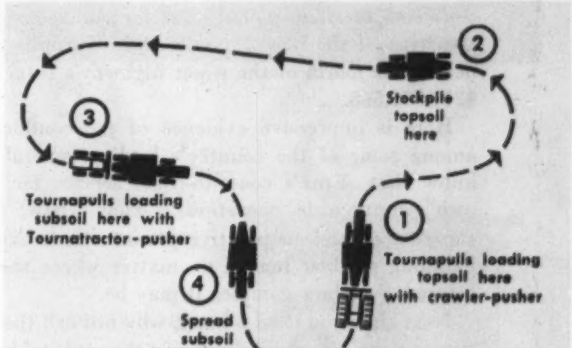
600 pay yards per hour on 1080′ cycle

On a typical 1080′ cycle, each Tournapull delivered 20 loads per 55-minute hour. Two of the 3 Tournapulls, equipped with new P19 scrapers, averaged 11½ pay yards per load, or 460 pay yards per hour. The other "C", with older E16 scraper, hauled 10 pay yards per trip, or 200 pay yards per hour. Altogether, output for 3 C Tournapulls on this cycle totaled 660 pay yards per hour.

E. J. Button & Sons bought their first electric-control C Tournapull in 1950. They added another "C" to their fleet in 1952 and the third in 1953. Records show average mechanical efficiency of 90% on all 3 machines to date. Says Owner W. M. Button, "We like Tournapull performance very much. I especially like the full 90° turn. It really gets rigs in and out of tight places."

Use Tournapulls for quick completion and better profit

Check extra profits modern C Tournapulls can earn for you. Write or phone for a demonstration on your next job. Prove Tournapull performance for yourself.


②
Stockpile topsoil here
③
Tournapulls loading subsoil here with Tournatractor-pusher
①
Tournapulls loading topsoil here with crawler-pusher
④
Spread subsoil here

Use "T" cycle for greatest efficiency — Job was laid out to make most efficient use of Tournapull speed. "C's" loaded topsoil at (1), stockpiled it at (2), loaded clay loam at (3), and spread in low spot at (4). Tournapulls were step-loaded so that pusher spent minimum time positioning.

Tournatractor—Trademark, Tournapull—Trademark Reg. U.S. Pat. Off. P-598-B-b

LeTourneau-Westinghouse Company

PEORIA, ILLINOIS

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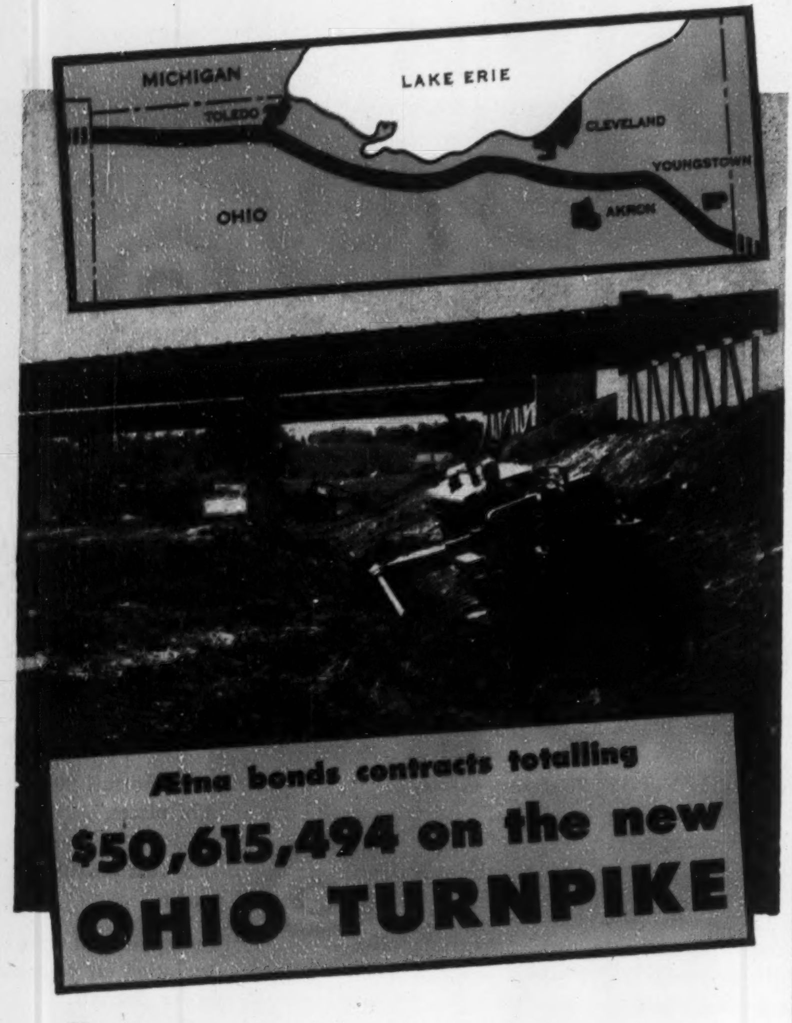

Ætna bonds contracts totalling

$50,615,494 on the new

OHIO TURNPIKE

The Ætna Casualty and Surety Company has written bonds on contracts totalling $50,615,494 for contractors engaged in construction of the new 241 mile Ohio Turnpike. This represents nearly *one fourth* of the super highway's total estimated cost of $211,875,568.

Here is impressive evidence of the confidence Ætna enjoys among some of the country's leading general contractors, who know that Ætna's coast-to-coast service facilities match their own countrywide operations. They know, too, that Ætna's experienced and cooperative personnel can expedite the prompt handling of their bonds, no matter where their next project is located — or how complex it may be.

Next time you need a bond, why not call the Ætna representative in your community and join the ranks of hundreds who bond with Ætna — always.

No job too big--no job too small

ÆTNA CASUALTY AND SURETY COMPANY
AFFILIATED COMPANIES: ÆTNA LIFE INSURANCE COMPANY
AUTOMOBILE INSURANCE COMPANY • STANDARD FIRE INSURANCE COMPANY
HARTFORD 15, CONNECTICUT

READER COMMENT

punchings. Our laboratory test mixtures produced a maximum density of 377 lb per cu ft, using steel shot instead of sand as the fine aggregate, together with steel punchings as the coarse aggregate. The mixes had a water-cement ratio of 4 gal per bag of cement, and a yield of 7 bags of cement per cubic yard. With Type I cement, its cylinder strength was 6,080 psi at 21 days, and its flexural strength was 462 psi.

Observations of fractured specimens of concrete placed as described indicate a well-mixed, integrated mass. Steel trowel finishes can easily be applied. In short, from outward appearance, heavy concrete can scarcely be distinguished from ordinary concrete. Its great weight and strength appear to be its distinguishing characteristics.

E. I. FIESENHEISER
Director, Department of Civil Engineering, Illinois Institute of Technology, Chicago, Ill.

CALENDAR

American Society of Civil Engineers, hydraulics division, annual convention, Austin, Texas, Driskill Hotel, Sept. 8-10.

National Highway Conference of County Engineers and Officials, ARBA, Deshler-Hilton Hotel, Columbus, Ohio, Sept. 13-15.

Society of American Military Engineers and **American Society of Civil Engineers,** District 7, joint meeting, Hotel St. Paul, St. Paul, Minn., Sept. 13-14.

Illuminating Engineering Society, national technical conference, Chalfonte-Haddon Hall Hotel, Atlantic City, Sept. 13-17.

Western Association of State Highway Officials, Challenger Inn, Sun Valley, Idaho, Sept. 16-18.

Public Works Congress of the American Public Works Association, Claridge Hotel, Atlantic City, N. J., Sept. 19-22.

Society for Experimental Stress Analysis and International Congress and Exposition: Bellevue-Stratford Hotel, Philadelphia, Pa., Sept. 21-23.

Southeastern Association of State Highway Officials, annual meeting, Andrew Jackson Hotel, Nashville, Tenn., Sept. 28-30.

New England Water Works Assn., Poland Springs, Me., Oct. 4-6.

National Conference on Industrial Hydraulics, annual meeting, Sheraton Hotel, Chicago, Oct. 14-15.

Structural Engineers Association of California, Hotel del Coronado, Coronado, Calif., Oct. 14-16.

American Society of Civil Engineers, annual convention, Hotel Statler, New York, Oct. 18-22.

BRIXMENT

Better Mortar for Blocks

BETTER BOND

To obtain good concrete block walls, the best possible bond must be secured between the block and the mortar, wherever they come into contact with each other.

The mortar must stay soft and plastic long enough to let the bricklayer level, plumb and straighten the unit — to adjust it to its final position in the wall — before the mortar stiffens.

Brixment mortar has high water-retaining capacity. This prevents the porous unit from sucking the water out of the mortar too fast. It gives the bricklayer sufficient time to bring the block to its final position, while the mortar is still plastic enough to form a good tight bond with the block.

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CEMENT FOR MASONRY
LOUISVILLE CEMENT CO.
BRIXMENT

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ROEBLING
WIRE ROPE
TRENTON N.J.

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* * *

Why not find out for yourself? Call your nearest Roebling office or distributor for a Field Man. He'll recommend the ropes that perform and stand up best in the excavating and construction fields. And you'll learn what service really means!

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Subsidiary of The Colorado Fuel and Iron Corporation

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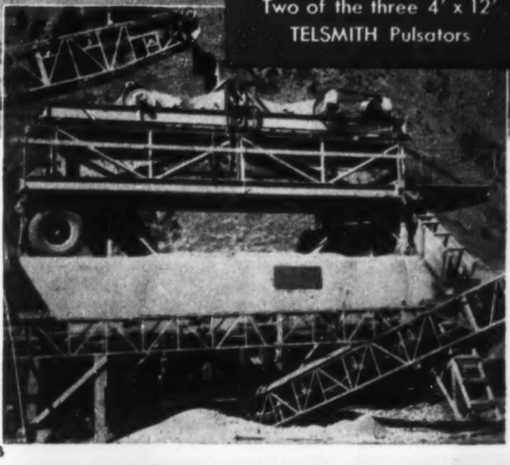
Gyrasphere Crusher

NEWPORT CONSTRUCTION CO. *likes* TELSMITH *equipment*



Two of the three 4′ x 12′
TELSMITH Pulsators

Making base rock and oil rock for the Baker Homestake Highway, this plant of the Newport Construction Co. at Baker, Oregon, averages 125-150 yds. hourly. All fine crushing is easily handled by one 48″ FC Telsmith Gyrasphere. Two of the plant's three 4′ x 12′ Telsmith Pulsator screens, trailer-mounted and placed atop a portable bunker, are making finished sizes. The third is used as a scalper. Mr. Marshall Newport says he is "very happy" with Telsmith performance.

Send for Bulletin 266.

Q-28

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Extra #1

A fire-safe acoustical ceiling

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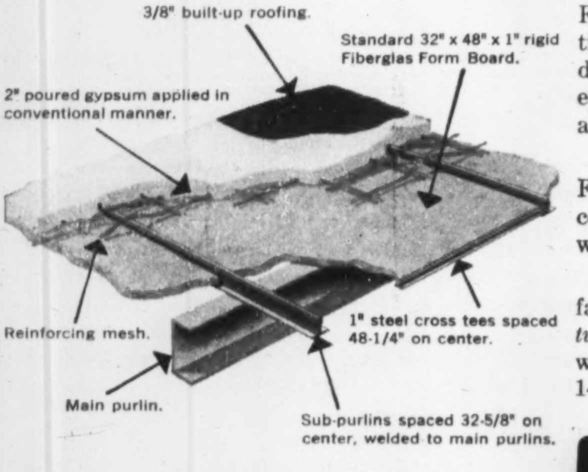
3/8" built-up roofing.
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Fiberglas* Acoustical Form Board combines four functions in a single inorganic unit. First: it's a permanent, dimensionally stable form board. Second: it's a highly efficient roof insulation. Third: it's fire-safe. Fourth: it's an acoustical ceiling.

Yet in a poured-in-place deck, Fiberglas Acoustical Form Board compares in cost with a suspended acoustical ceiling alone! It's easily installed with gypsum or lightweight aggregate.

Specify Fiberglas Acoustical Form Board for schools, factories, shopping centers, all similar structures . . . get *two big extras* at one low price! For full technical data write Owens-Corning Fiberglas Corporation, Dept. 145-H-26, Toledo 1, Ohio.

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SOUND CONTROL PRODUCTS • ROOFING INSULATIONS
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*T. M. Reg. U. S. Pat. Off.

ENGINEERING NEWS-RECORD

Vol. 153, No. 9 Aug. 26, 1954

Number of copies of this issue printed: 63,890

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THE CONSTRUCTION WEEK

CODE GROWTH—New York State's Building Construction Code—first parts of which were released in 1951 and still covering only residential construction—is gaining fast acceptance.

Peekskill is now the 135th community in the state to accept the code—a performance-type document. The portion that will cover nonresidential building is due to be published next year.

TUNNEL HOLDUP?—That $11-million sewage disposal plan for Nashville, Tenn., may grind to a halt for awhile, if courts insist on it.

Blowup came—after two months of verbal charges and countercharges—when a local citizen filed suit in Chancery Court seeking to cancel the city's contracts with Oman Construction Co. to build a 2½-mi sewer tunnel for $2.1 million. The suit contends that the tunnel could have been built for $250,000 less.

In mid-June, a city councilman challenged the contract award, saying two other firms could have done the job cheaper; other charges were that use of large-diameter concrete pipe (instead of monolithic concrete recommended by one of the city's consultants) actually hiked the contract price by another $361,000.

WHO'S GOT TVA POWER?—The fire Democratic Chairman Mitchell started with his criticism of the Dixon-Yates power contract with AEC got new fuel this week.

In New York, spokesmen for a syndicate that lost out to the Dixon-Yates group, claimed his proposal would have saved the U. S. $150 million.

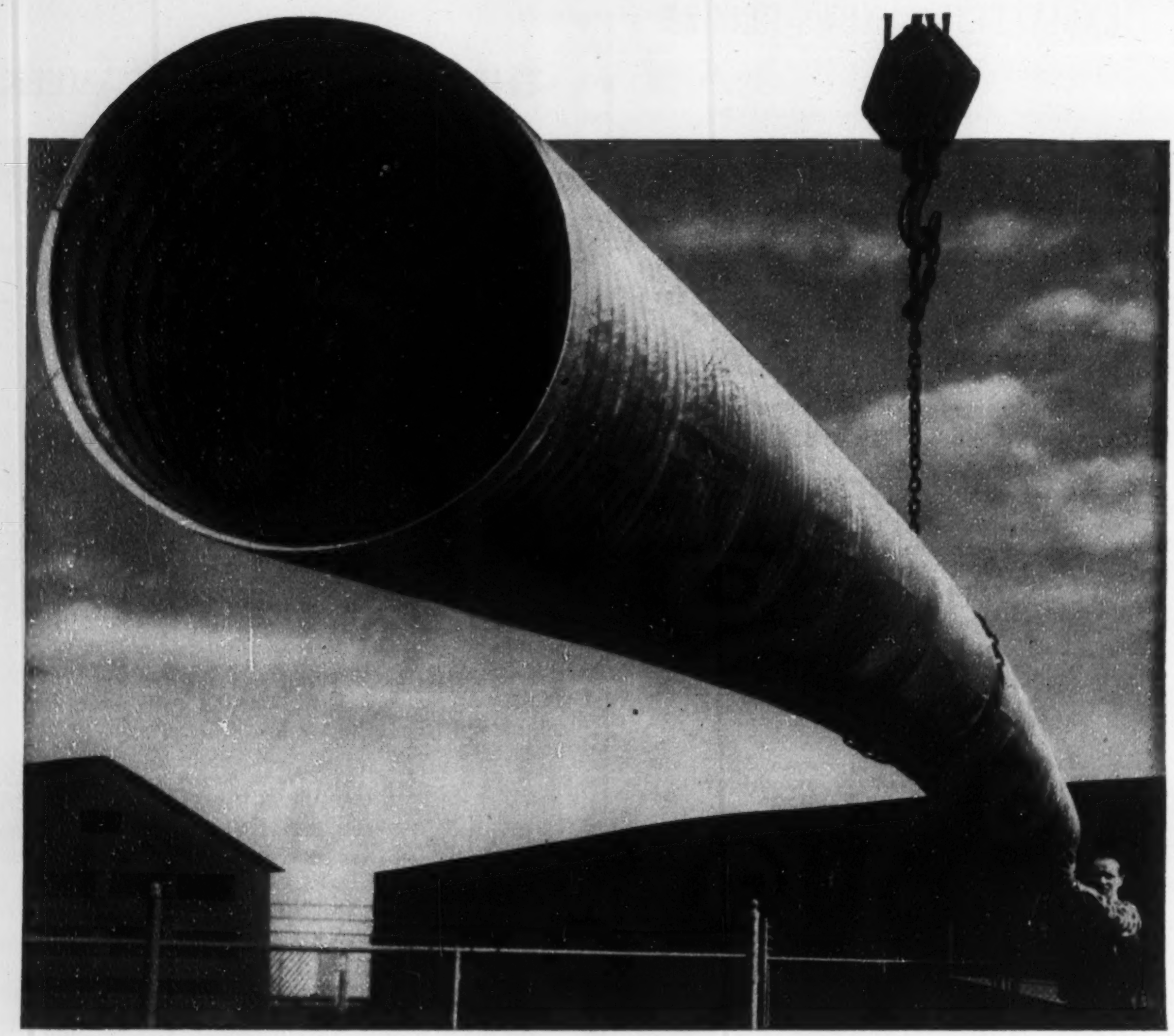
As you can see, the charges are flying over no small-potato proposition. Involved is a 600,000 kw steam-power plant, privately built, that would feed into the TVA system so that AEC can take out increasingly more power.

The New Yorker was proposing that his syndicate build and operate a plant (at Fulton, Tenn.), limit its profits to $4 million over a 32-year period, then turn the plant over to the U. S.

NOT SO ATTRACTIVE—The long-standing advantages of municipal employment—what amount to "fringe benefits"—aren't so far ahead of what's available in private industry.

That's a solemn warning from the Civil Service Assembly in Chicago, which has just published a new study of the situation. The long vacations, the paid sick leave, the tenure of service, are all available from private industry—and with better base pay to start with.

NEW CEMENT SHORTAGE?—It'll be worth watching outcome of that strike of loaders and packers at Huron Portland's plant at Detroit. It already has cut 50% of supply around Detroit.



How is this for Flexibility in an 18-in. Diameter Culvert Pipe?

This 28-ft culvert is flexing under its own weight. Made of 16-gage galvanized sheet steel, it consists of two 14-ft sections joined by a single field coupling. Its total weight is 440 lb.

Large-diameter corrugated pipe of sheet steel has a high degree of flexibility and tensile strength. These properties allow the pipe to conform to irregular grade in a trench. They mean that the pipe can absorb changing loads caused by shifting or freezing soils, without pulling apart. And they permit it to withstand the impact and vibration of overhead traffic.

In addition, this kind of pipe weighs only a fraction as much per foot as comparable pipe of other materials. It comes in longer sections that are easy to handle without special lifting equipment, and that require the minimum of field joints.

COPPER-BEARING, CORROSION-RESISTING STEEL

Bethlehem does not fabricate culvert or drainage pipe, but does manufacture the Beth-Cu-Loy galvanized corrugated and flat steel stock used by pipe fabricators. This copper-bearing steel carries a heavy coating of zinc and has excellent resistance to corrosion. It more than meets Federal specifications, as well as those of the American Association of State Highway Officials.

If you would like further information on Beth-Cu-Loy, or if you would like to know who uses it in culvert pipe, write or phone any Bethlehem office.

BETHLEHEM STEEL COMPANY

BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETH-CU-LOY *GALVANIZED* CULVERT SHEETS

BETHLEHEM STEEL

WASHINGTON OBSERVER

Legislation on housing to sweep up some loose ends will be put before Congress for early action next year. Biggest need housing officials see, offhand, is more money to staff Washington, and field offices to take care of an expected upsurge in business under the omnibus law voted this year. The Administration's request for $5,350,000 for FHA was cut to $1,600,000, leaving the agency short-handed. A deficiency appropriation will be sought early in the year.

Reorganization of HHFA will be in early, too. Administrator Cole was about ready to make recommendations before Congress adjourned. Biggest item: putting Cole in top command.

•

A big chunk of the near $5 million for the inter-American Highway will go to Guatemala, now that a "friendly" government is in control. Big project will be closing of the 40-odd mile gap connecting at the Mexican border. Construction also will be done in southern Costa Rica and northern Panama.

There's a chance U. S. firms will be invited in to bid on the new construction. You'll know in the next several days.

•

The Corps of Engineers is putting its show on the road: It's Board of Engineers for Rivers and Harbors will open shop Sept. 13 at Des Moines to give the citizens an opportunity to see how decisions are made for Army Engineer projects. There will be public hearings on proposed projects for the Des Moines area. Actual projects will be voted up or down at the sessions for projects in other areas. They are: Nine Mile Drain and Carlow Ditch in Michigan; Hager Slough on the Illinois River in Illinois; Gering and Mitchell Valleys flood control projects on the Platte River in Nebraska, and Tacoma Harbor in Washington.

•

Upper Colorado and Frying Pan-Arkansas will be two of the biggest political slogans in western politics. Southern California congressmen blocked passage of both projects in the adjournment rush, and Upper Basin people are up in arms. It may bring a split in the westren bloc.

Eisenhower will push for both projects again next year. He'll do some campaigning in their behalf as he makes his appearances this fall.

•

Californians got their Santa Maria project at the last minute—a surprise. Reclamation will build a dam on the Cuyama River.

•

Renewed activity on the Tuttle Creek project in the Kansas Basin is coming, as the politicians get steam up for the fall election. Corps of Engineers (and the Administration) is still behind the big dam—but won't move until the First District congressional election results are in. In 1952, Democratic Rep. Miller defeated Republican Albert Cole, new housing chief, on the Tuttle Creek issue, and he's campaigning against it again this year.

•

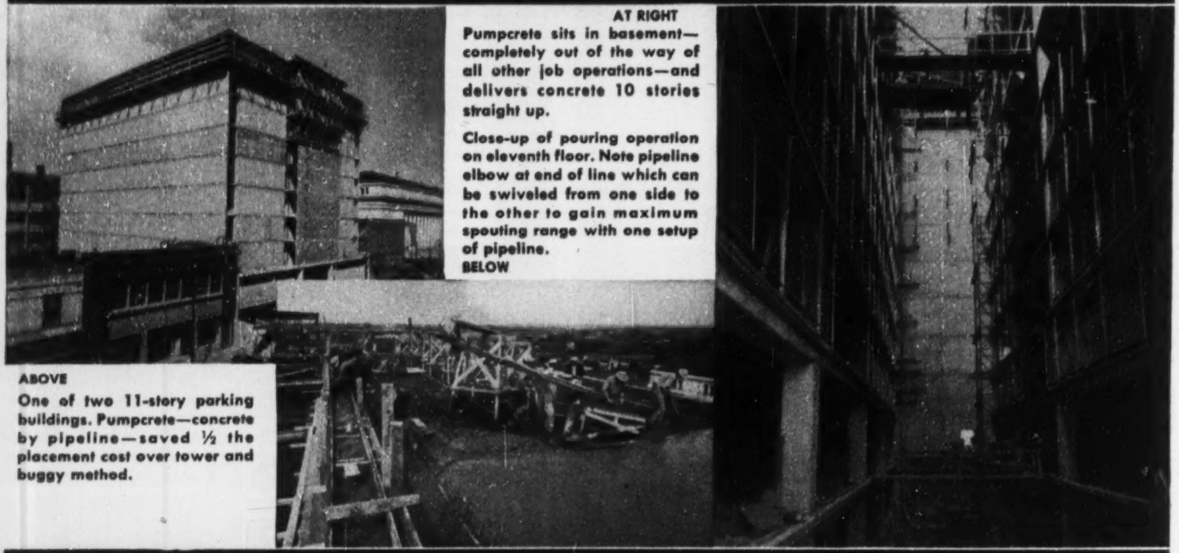
Social Security for consulting engineers and architects finally becomes law under the legislation Congress approved just before adjournment. Also added to the coverage are U. S. citizen-employes of subsidiaries of American firms abroad. The tax will be on the first $4,200 of income, and the tax on the professionals will be 3%.

Concrete for Two Parking Buildings Pumped at ½ Original Estimate

Using a single 160 Pumpcrete, a wise contractor placed the concrete for two 11-story parking buildings—at a saving of ½ the original estimate for doing the job with towers and concrete buggies. The jobs were several blocks apart, but the readily portable Pumpcrete was easily shuttled between the two for alternate pours.

Located at basement level, Pumpcrete was readily accessible to truck mixers that delivered concrete to the site through the alley. Pipeline was run up floor by floor as fast as pouring progressed. Compare this simplicity with ramps, buggy runs, towers, and other cost-adding preparatory work.

Important too, on a job such as this where job area is congested, was the absence of interference among the various trades. Form setters, steel setters, masons, electricians, etc., could work on schedule without being hampered by pouring crews and buggy traffic.



AT RIGHT
Pumpcrete sits in basement—completely out of the way of all other job operations—and delivers concrete 10 stories straight up.

Close-up of pouring operation on eleventh floor. Note pipeline elbow at end of line which can be swiveled from one side to the other to gain maximum spouting range with one setup of pipeline.
BELOW

ABOVE
One of two 11-story parking buildings. Pumpcrete—concrete by pipeline—saved ½ the placement cost over tower and buggy method.

When you pump concrete . . . costs come down

IF YOU'RE INTERESTED in seeing other types of jobs on which Rex Pumpcrete has cut the cost of concrete placement, we will be happy to send you copies of "It was done with Pumpcrete." There may be helpful data you can use to cut costs on your jobs. See your Rex Distributor, or write Chain Belt Company, 4633 W. Greenfield Ave., Milwaukee 1, Wis.

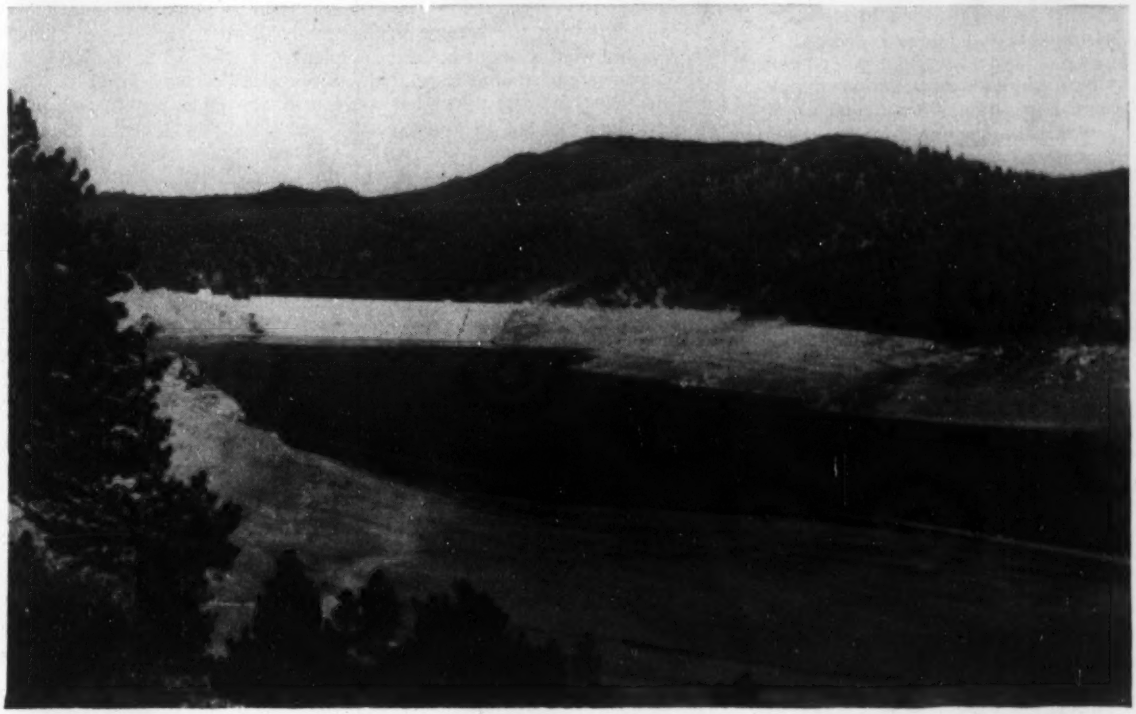
CHAIN BELT REX COMPANY ®

CONSTRUCTION MACHINERY

MOTO-MIXERS® MIXERS PUMPS PUMPCRETES® PAVERS

AUGUST 26, 1954

ENGINEERING NEWS-RECORD



DROUGHT LOWERED WATER LEVEL in this Colorado reservoir to less than one-third of normal. Water normally reaches up to the tree line. This is one result of dangerously persistent drought affecting many parts of the U. S. It means . . .

There's urgency now in controlling water use

It's drought season again—and for 1954 this is the second time around.

Only last spring prolonged unseasonal drought—built up over periods of six months to six years in various sections of the country—had dust flying, water supplies dwindling (ENR Apr. 1, p. 23).

Question then was: How bad will summer drought be? Last week, ENR correspondents went out to get an answer. The answer has many parts and here are just a few:

- Hoover Dam's firm power commitment has been cut 12% because of the present low level of Lake Meade.
- Forty southern Illinois towns still face severe municipal water shortages due to a continuing two-year drought condition.
- For two months a good part of the Southeast has sizzled in record heat with rainfall low as one-third of normal.

You can't add these parts; they are apples and oranges. Drought conditions last week affected widely scattered sections of the country in a wide variety of ways. But if it possible to deduce from the pieces a single description of this second drought of '54, this is it:

This is a farmer's drought.

• Crops are suffering—ENR's weather report (p. 41) shows about half of 20 major cities rather seriously behind their normal annual rainfall to this date. Yet, present drought conditions had not caused municipal water crises in any of these major cities last week.

There were no reports from private power companies on seriously curtailed hydropower output due to shortage of water. Only from the West, from the Bureau of Reclamation, came word of the Hoover Dam cut-back, plus word that USBR would have to begin buying power in the western division of the Missouri Basin by early fall to conserve in storage every acre-foot possible for next summer's irrigation demands.

On Colorado's eastern slope, Denver, Colorado Springs, Boulder, Pueblo and Fort Collins have been water-short all summer. Lincoln and Grand Island in Nebraska have suffered deficiencies in public water supply. There is no strain as yet in Kansas or Missouri towns. Texas cities are plagued with serious continuing problems of water resource development, but no outstanding big-city water shortage had shown up last week as a direct effect of drought this summer.

Everywhere, it is the farmer, his crops and his livestock who are suffering.

For the engineer, this means that problems stressed by current drought conditions in the widely scattered areas over which they exist are problems of—

- Conservation of water both on and under the ground.
- Increased use of water for irrigation of land in semi-humid areas where irrigation has not figured significantly before.
- Legal control of water use in areas where water has been plentiful up to now and regulation hasn't been an issue.

Take the Southeast, for example. In Georgia, 60% of the agricultural crop may be affected by current drought conditions. More and more

(Continued on page 22)

. . . Water control

southern farmers are realizing, and will increasingly realize, that it is cheaper to irrigate than to lose crops to drought.

• New emphasis on irrigation—Supplemental irrigation is now generally regarded as the coming thing for eastern agricultural areas. There's nothing new about the idea; it dates back to 1900. But wide use of the idea of supplemental irrigation is new, and droughts just like the one which settled on the Southeast this summer will see to it that the idea grows.

Experts are telling South Carolina farmers that irrigation is the answer to many of their problems. It can take a big chunk of the risk out of farming in areas where 10-14 days without rain can kill or cripple a crop. In Virginia, a legislator has called supplemental irrigation "The Missing Link in maximum production on Southern Farms."

Supplemental irrigation looms large as a future use of water in areas besides the Southeast. Irrigation of high-value crops is fairly common in Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Delaware and Florida. It is also a subject which has been brought up with grave concern recently in Indiana and in Ohio.

• Move to tighten laws—This suggests a serious phase of the problem of irrigation in eastern areas: Water law in the East is not nearly so well developed as in the semi-arid and arid western states. As far as surface water has been concerned, it has generally been the doctrine of riparian rights, by which nothing entirely definitive on water is prescribed. And insofar as ground water is concerned, regulation of its withdrawal is even more loose in many states.

A leader in efforts to tighten water law, to effect conservation of water for its best uses, is South Carolina, which last year began work on a new law based on the doctrine of prior appropriation, the western doctrine. Under the law, a responsible board would issue permits for water use on a priority basis in this order: domestic, municipal, irrigation, industrial, recreational and hydropower.

Most observers in South Carolina believe the new water doctrine will be enacted in 1955. There is pressure on for it. Drought-stricken farmers, who realize the future of irrigation, realize also that they'll be hard put for getting water for irrigation if some orderly system of legal usage is not set up.

Chances are good, too, that water legislation might come up in Georgia's legislature next session. And in Alabama, Mississippi, Michigan—and half a dozen states in between—consideration is being given new water-use legislation.

To find just what the present legal picture is and what it might better be, The Conservation Foundation told ENR in New York last week that it will get rolling this fall on a one-year research project in cooperation with experts on water law. The idea is to draw on experience of the West, where water law is further developed, in an attempt to assist eastern states now faced with water problems in adapting this experience.

Congress at this session extended the Water Facilities Act to cover the entire country. Formerly limited to the 17 western reclamation states, this act makes loans available to individual farmers or groups for development of farm water supply or irrigation systems. With the East and South becoming more interested in supplemental irrigation, as a result of the drought, the broadened act will help encourage better use of farm water.

• Kansas-Missouri farms hard hit—This summer's drought is a farmer's drought, too, in Missouri and Kansas. Missouri has had in the last few months a total assistance fund of $10.9 million. Most of this went to purchase hay and defray its transportation costs. President Eisenhower has designated 76 counties, mostly in southern Missouri as drought disaster areas eligible for federal aid.

Late last month, Missouri's State Geologist Edward L. Clark surveyed the situation to see what new and deepened wells could do. His findings:

- Present drought is worse than that of the thirties.
- Farmers should be offered long-term loans for well drilling.

In Kansas, while no city of major size was in a critical water supply situation last week, there were severe troubles in small towns lacking either adequate wells or sufficient water storage space. Three emergency water supply units, 1,000-gpm portable plants of the U.S. Public Health Service, are already in operation. A fourth was on its way to the town of Cedar Vale (pop. 1,010) at the request of Dwight Metzler, chief engineer of the Kansas State Board of Health.

Do sunspots bring rain?

Dr. Walter Orr Roberts, director of the Harvard University-Colorado University high-altitude laboratories, has counted the sun's spots and sees an end of the drought by the end of 1955.

Dr. Roberts said his observations from Climax, Colo., and Boulder, Colo., have shown a steady decline in sunspots beginning in 1947. But sunspots started increasing again in June 1954. He said sunspots decreased in the same manner during the drought of the 30s and increased as precipitation returned to normal.

Dr. Roberts acknowledges that "only about 5%" of scientists, astronomers, weathermen and meteorologists agree with the sunspot-rain theory.

• Municipal crises in Illinois—Many municipal troubles with supply, aggravated by current drought, center in southern Illinois, where rainfall has been deficient for two years. East St. Louis, and the Mattoon-Effingham regions are hardest hit.

New records for low stream flow are being set in the drought stricken area, with many streams showing less than 5% of normal flow for the past 12 months. Twenty-seven reservoirs for municipal supply have less than 8 months supply on hand. Some are nearly empty.

• Ohio seeks long-range solution—In Ohio, crops generally have received ample rainfall, but groundwater tables are at a record low—varying from 6 in. to 3 ft 6 in. below 1953 average, according to the Ohio Water Conservation Committee. Conditions are expected to worsen by early fall; then improve.

The governor's 100-member water study committee is seeking long-range solutions to the problem; will meet Sept. 28 to propose new laws and recommendations for conserving and improving water supplies.

• Indiana considers new laws—Irrigation has been increased vastly in Indiana this summer—first time, in fact, that it has gained real status as a factor in crop growing. It is spotted in many sections. This new demand for water has caused the Indiana Flood Control and Water Resources Commission to appoint a special committee for study. Their concern is the same as that in the Southeast: Are new statutes needed?

Texas, as always, needs rain. It is certain that the 1955 legislature will be under pressure for enactment of an effective program of water resource development. A Texas Water Resources Commitee is now drawing up recommendations for water laws.

In irrigated states of the Midwest and West, the situation is generally this: There has been enough water to handle this summer's crops, but storage has been drawn way down, boding nothing but bad for winter and next summer's crops.

ST. LAWRENCE SEAWAY

SEAWAY OFFICIALS—The men responsible for construction of the U. S. part of the St. Lawrence Seaway pose in front of a map of the project. Left to right, front: Martin O. Ottershagen, deputy administrator of the St. Lawrence Seaway Development Corp.; Lewis G. Castle, administrator; and Hugh Moore. In rear: John C. Beukema, Kenneth M. Lloyd and Edward J. Noble. Moore, Beukema, Lloyd and Noble are members of the Seaway advisory board.

U.S.-Canadian agreement forecasts early start on Seaway construction

Plans and specifications for the U. S. portion of the St. Lawrence Seaway will be completed within 90 days. Still to be determined is the best timing of bid invitations for the first construction contract, but bid advertising is expected to start by the first of the year.

By that time, U. S. authorities expect to have their construction program well worked out. Further discussions with the Canadian government and its engineers are necessary before the construction schedule becomes firmly established.

Last week's agreement with the Canadians settled one important part of the U. S. program—that the St. Lawrence Seaway Development Corp. would go ahead immediately with the construction of the canal and two locks on the U. S. side of the river to pass shipping around the power project works at Barnhart Island.

Left up in the air was a final decision on the single-lock canal farther upstream around Iroquois Dam. The Canadians held to their rights under the 1952 exchange of notes when they assumed an obligation to build the Seaway if the United States would agree to join in construction of the power project.

• **Canadian plans listed**—Canadian officials said last week they expect to construct forthwith a canal and lock at Iroquois. They also said they intend to build other parallel works on the Canadian side of the International Rapids section—meaning particularly Barnhart Island—when traffic justifies.

Here is the line-up of work to be done by Canada on the Seaway. Total cost will be about $189.5 million.

• Building of canals and locks at Lachine (near Monteral). The Province of Quebec may undertake a power development there in conjunction with the Seaway work. Cost to the Canadian government for navigation facilities alone at this point is estimated at $122 million. It would be less if both power and navigation work are done at the same time.

• Installing a lock and improving an existing canal at Soulange where the Beauharnois power plant is located. This will cost about $47 million.

• Dredging in Lake St. Francis to cost $4.5 million.

• Building of canal and lock at Iroquois to cost about $14 million.

• Deepening of Welland Canal from 25 to 27 ft to cost about $2 million.

Canadian locks and canal at Barnhart Island won't be built for some years. But if Canada goes ahead immediately with her plans for Iroquois, U. S. authorities will have to decide whether to build parallel facilities on the U. S. side of the river.

Congress would have to act before the U. S. canal and lock at Iroquois could be dropped. The recently enacted Seaway legislation calls for full construction of International Rapids canals and locks on the U. S. side of the St. Lawrence.

Portable A-power

Army Engineers ask bids on atom plant designed to be transported by air

The Corps of Engineers is in the race to build the nation's first atomic power plant.

Acting jointly with the Atomic Energy Commission, the Corps last week invited 33 qualified U. S. firms to submit lump-sum bids on the first transportable nuclear power plant suitable for military use. The plant, costing an estimated $4 million, is to be located at the Engineering Center at Fort Belvoir, Va.— 25 mi from Washington.

Several leading engineering and construction companies are among the 33 firms that have shown interest in and have been qualified for bidding as prime contractors. Two joint ventures are listed, one comprising Donovan Construction Co., Winston Bros. Co., C. F. Lytle Co., Green Construction Co. and Missouri Valley Construction Inc. And the other consisting of Sverdrup & Parcel and Food Machinery & Chemical Corp. Individual firms invited to bid include Kaiser Engineers, Merritt-Chapman & Scott and Raymond Concrete Pile Co.

Specifications call for the plant to be so designed that no single section is too large to be transported by cargo plane. Preliminary designs indicate that an assembled plant would require a building 29 ft wide, 42 ft high and 80 ft long. It is to have an electrical generating capacity of 1,700 kw—large enough to supply power requirements of a medium-size military installation.

A table-sized model of the plant, based on preliminary designs, indicates that the housing structure probably will consist of steel beams with aluminum siding and roof. Large concrete piling will shield the atomic firebox (reactor) from other portions of the plant. Rough estimates indicate the building and concrete shielding will cost around $500,000.

Aid for airports

Federal money will loose substantial local funds for airport construction

Federal aid to airports—an on-again-off-again affair since it was started in 1946—got a medium-sized shot in the arm when Congress voted $22 million for the program for fiscal 1955.

The $22 million was included in a supplemental appropriation bill passed last week. It is part of the 'nudge' program announced by Commerce Secretary Sinclair Weeks. In itself, it isn't too much money, but it could shake loose a great deal more that has been sitting around waiting for Congress to act.

It has been estimated that there is up to $130 million of local money that can't be spent until federal funds are available for the same projects. Federal money apportioned from the $22 million will turn this local money loose for airport construction.

The psychological boost from the fact that federal funds are on the way could start some projects earlier than they might otherwise.

The Civil Aeronautics Administration, the agency which doles the money out, has taken applications for airport projects and currently is making up a list of approvals. It should be out by the end of September.

The federal air program is altered this year to match shifts in philosophy in both the Administration and Congress. Federal money is supposed to go more heavily to the larger airports. And it is to be spent only on airstrips and navigational facilities, not on terminal and other revenue-producing facilities.

Congress votes $21 million to aid hospital construction

Congress voted $21 million in the supplemental appropriation bill to inaugurate the first year's construction of hospital facilities to take care of the aged and chronically ill.

The money will go out in federal grants—to be matched by the states and localities—for the construction of diagnostic or treatment centers, chronic disease hospitals, rehabilitation facilities and nursing homes.

President Eisenhower asked—and Congress approved—a $180-million, three-year program as an addition to the present Hill-Burton program of federal assistance in the construction of state and local hospitals.

As under the existing program, the money for the added facilities will be matched locally on about the same 50-50 basis.

Here's complete tally of appropriations for construction in fiscal year 1955

	In millions of dollars		
	Fiscal '53	Fiscal '54†	**Fiscal '55**
ALL CONSTRUCTION	$8,223.9	$2,258.8	**$2,663.9**†
MILITARY CONSTRUCTION			
Air Force—airbase construction	1,245.3	240.8	**630.0**
Army—military bases	586.9	0.0	.....
Civilian components	20.0	9.1	**15.0**
Navy—Bureau of Yards and Docks	363.3	0.0	**98.0**
Civilian components	0	30.0	**15.0**
Secretary of Defense—military const	140.0	0.0	**88.5**#
ARMY CIVIL FUNCTIONS			
Rivers and harbors & flood control	501.5	278.7	**306.4**
Mississippi R. flood control	60.3	51.4	**45.5**
Other civil functions	4.2	2.8	**4.7**
INDEPENDENT OFFICES			
Atomic Energy Commission	3,327.5	166.0	**110.9**
TVA	336.0	188.4	**120.0**
VA hospitals	117.5	38.7	**50.5**
NACA	17.7	11.4	**4.6**
HHFA slum clear & urban redevelop	8.0	20.0	**40.0**
Defense Housing	32.5	0.0	**(4.5)***
Gen'l Service Adm.—Pub. Bldg. Serv	117.2	99.4	**100.5**
American Battle Monuments	45.0	8.5	**3.5**
INTERIOR			
Reclamation	181.8	116.3	**132.0**
Bonneville Power Adm	66.5	38.9	**24.3**
Alaska—public works	13.2	12.0	**9.5**
Roads	17.0	14.6	**8.0**
Railroad	3.9	8.8	**2.9**
Virgin Is.—public works	2.6	1.0	.....
Bureau Indian Affairs	17.0	15.9	**14.6**
National Park Service	15.0	15.4	**13.7**
Other Interior	37.6	30.6	**34.5**
COMMERCE—BUREAU PUBLIC ROADS			
Federal aid highways	510.0	530.0	**500.0**
Forest highways	18.0	15.0	**15.0**
Access roads	28.0	5.5	.....
Grade Crossing elimination	0.0	2.2	.....
Public lands highways	0.0	1.8	.....
Inter-American Highway	1.0	1.0	**5.8**
Rama Road, Nicaragua	0.0	1.0	**1.0**
COMMERCE—CAA			
Federal aid airports	23.3	22.7	**22.0**
Washington Nat'l Airport	0.03	0.4	**0.0**
COMMERCE—Other	0.1	1.2	**0.1**
LABOR, HEALTH & WELFARE			
Hospital construction	134.7	84.7	**96.0**
School construction	195.0	125.0	**70.0**
Other	16.2	4.4	**6.6**
AGRICULTURE			
Forest roads and trails	16.0	14.5	**22.5**
Flood control	7.8	5.0	**7.5**
Soil Conservation Service	....	....	**1.8**
STATE			
Internat'l Boundary & Water Comm.	13.7	6.6	**0.3**
JUSTICE			
Federal Prison System	0.8	0.2	**0.0**
LEGISLATURE			
Capital arch	0.07	1.0	**1.5**
Additional Senate office building	....	....	**6.0**
DISTRICT OF COLUMBIA	21.5	28.8	**39.9**

† Figures don't add up because of rounding
# Incl $75 mil. housing; $13.5 mil. access roads
* Cutback

Military housing

Pentagon fears new law won't meet requirements of military establishments

Armed forces expect the military housing bill passed by Congress will do little more than assure that the housing shortage, which currently is found on military posts, will continue to be a headache.

Although the Administration asked originally for a $350-million authorization, Congress cut the program to $175 million and provided only $75 million of new money (ENR Aug. 19, p. 21).

Congress also added a proviso in the appropriation that bars erection of military housing in any location where it could compete with private housing.

The military say there is a crying need for all of the 13,600 family units authorized. But with the amount of money that has been appropriated, they fear less than 40% of that number can be built.

Locations and cost limits for the military housing projects are specified in the authorization bill. The bill further restricts the eligible locations. It requires the Secretary of Defense to certify for each site that:

- Construction of privately financed Wheery housing is impractical.
- Adequate housing at reasonable rents is not available in the particular area.
- Suitable housing cannot be acquired under other provisions of law.

All of these limitations had been considered and complied with in preparation of the request for authorized housing, the military say. But writing them into law will make the restrictions more binding and add another operating detail to the carrying out of the projects.

Michigan and Wisconsin sign water pollution agreement

Michigan and Wisconsin have signed an agreement to attack jointly the problem of water pollution in boundary streams.

The agreement applies specifically to the Montreal, Brule and Menominee Rivers. Although it is not mentioned in the pact, the two states also have made it clear that they are determined to fight pollution in Lake Superior and Lake Michigan.

Under the new agreement, Michigan and Wisconsin pledged themselves to "require the effective abatement of existing pollution and prevention of additional pollution" on the three streams.

RESCUE OPERATIONS bare twisted jumbo and tunneling machines at cave-in.

Re-study of Koolau Tunnel suggested after third cave-in kills five workers

A complete re-study of the Koolau mountain traffic tunnel outside Honolulu, T. H., appeared likely as a result of the Aug. 14 cave-in that killed five men and injured two—the worst industrial accident in Hawaiian history (ENR Aug. 19, p. 28).

Contractor E. E. Black has said he does not believe he can proceed on the present design to complete the remaining 900 ft or so of the 2,773-ft tunnel.

Beside the Aug 14 cave-in, which filled up about 300 ft of the tunnel shaft, there were two previous cave-ins which caused no injury. Both occured in the same construction area—1,800 ft to 2,100 ft into the mountain. They were attributed to the fact that construction had moved through a rock formation into rain-soaked, muddy terrain.

There was one cave-in on July 10 that filled about 300 ft of tunnel and a second on July 28 that filled about 40 ft of tunnel. The second cave-in was not disclosed until after the third disastrous collapse Aug 14.

Contractor Black suggests two alternate possibilities:

- An open cut to shorten the tunnel by 400 to 600 ft.
- An open cut with construction of a concrete tunnel and then a backfill of earth over this area.

The second plan might meet objections that the exceptionally large open cut would create a danger of slides and drainage problems. One Honolulu city engineer said the open cut would have to be close to record size. He estimated the cut would have to be up to 600 ft long, 200 ft deep at maximum, 50 ft wide at the bottom and 650 ft wide at the top.

He said the tunnel project already had established a near record for depth of fills. Fill material is up to 150 ft deep at the windward Oahu approach entrance to the tunnel from which boring started.

Work on the tunnel is indefinitely delayed by the series of cave-ins. Two jumbos used for drilling and for setting up to pour the concrete walls were buried and wrecked.

A new jumbo will have to come from the mainland.

Contractor Black indicated he would like to resume pouring of concrete linings in safe areas as soon as possible, but delay other work.

At the territory's request, J. Howard Bird, chief of the Accident Prevention and Health Division of the U. S. Bureau of Mines in San Francisco, flew to Hawaii Aug. 19 to study the tunnel problem.

Who will pay the damages and extra costs involved in any change of plans has not been clarified. Honolulu's engineer Mayor, John H. Wilson (the tunnel is officially named the Wilson Traffic Tunnel), has indicated he thinks all liability for the cave-ins is the contractor's exclusively.

N. Y. Thruway

Authority's loose specs irk sanitary engineers

The New York State Thruway Authority, which has been criticized for its handling of local water utilities along its route, trod on the toes of sanitary engineers again last week.

The agency asked contractors to submit designs along with bids for construction of single-state, high-rate trickling filter plants for some two dozen sewage disposal plants at restaurants on its route.

The situation came to light with the call for bids on four of these installations. Interested contractors were asked to submit unit prices on most items and a lump sum on mechanical equipment as their bids.

Plans of what they have bid on will then have to get Thruway Authority approval, but presumably any plant meeting the loosely drawn specifications will be approved. Specifications for sewage works set type and degree of treatment required; plans show topography, borings and a location for the plant on which bids are asked.

Costwise, these plants are not insignificant. The four on which bids have been asked are estimated unofficially at about half a million dollars.

Originally a small activated sludge plant was considered. Then the State Architect's office, for the Thruway Authority, changed to the current scheme of asking for trickling filter treatment and letting the contractor submit design with his bid. A spokesman for the State Architect's office told ENR specifications for material are rigid, but specifications for process were purposefully loosely drawn so as not to exclude any manufacturer.

Remarkable thing about the whole situation, in the view of one observer interviewed by ENR, is that an agency of the state, which legalizes the practice of engineering only by licensed engineers should procure designs in such a manner—plus the equally remarkable hands-off attitude so far taken by the State Health Department, which usually concerns itself intensely with such sanitary works.

Plan revived for waterway linking Lake Erie, Pittsburgh

Plans for a direct Lake Erie-to-Pittsburgh water route were revitalized by action on the St. Lawrence Seaway.

David C. Warner, Ohio water conservation engineer, announced that he is preparing a report on the project for consideration of state officials.

His plan is for a 20-ft channel, with locks and lake, from Lake Erie to the Ohio Valley via the Ashtabula, Grand, Mahoning and Beaver Rivers.

Such a project, it was pointed out, would provide much needed flood control and water conservation facilities in the northeastern Ohio section.

In 1939, Army Engineers drafted recommendations on another plan. This included a dam on the Grand River near Harpersfield to provide water for locks which would lift vessels from the lake level. Under this plan, ships would enter the system through a dredged cut about 10 mi west of the city of Ashtabula.

Eddy in spillway flow upsets tug, drowns five

Bonneville Dam spillway flow snatched five men to their deaths and tore apart a 47-ft tug and an 80-ft barge last week as a crew prepared to conduct soundings for a cofferdam. The operation was in preparation for repair and restoration of baffles on the south portion of the dam.

A lone survivor, Henry Coles, told a Corps of Engineers board that the tug was moving the barge toward the face of the spillway sector, from which flow had been closed off, when the barge was sucked toward the torrent pouring through Gate No. 8. Coles managed to cut all but one rope linking the barge to the tug befor the water smashed onto the barge and immediately pulled the tug under.

Among the dead were Merle L. Tobias, 49, Portland engineer in charge of the crew, and Donald A. Lewis, 20, an Oregon State College engineering junior.

Larsen Construction Co. of Astoria, Ore., holds a $678,150 contract for repair of the baffles, the first such major repair on the 15-year-old Columbia River structure. Corps had closed down eight of the 16 main bays to create a quiet pool for the operation.

Better than mules

Water pipeline constructors in North Carolina's rugged Blue Ridge Mountains solved a difficult problem by using a helicopter to deliver pipe sections to assembly crews on the ground.

The rocky mountain terrain—more than 5,000 ft above sea level—made any other type of transport laborious, so a helicopter was brought in to do the job. It made 17 trips, carrying 500-ft sections of one-in. plastic pipe, each weighing 100 lbs.

Crews on the ground connected the sections into a water line more than 1½ mi long from Shanty Spring to Grandfather's Mountain, near Linville, N. C., where it supplements a well drilled 451 ft through rock. Hugh P. Morton, developer of Grandfather's Mountain, directed the job.

Consolidation

Army Engineers establish North Central Division

In a move aimed at economy and increased efficiency, the Corps of Engineers' Upper Mississippi Valley Division, St. Louis, is being merged with its Great Lakes Division, Chicago. The division office at St. Louis is comprised of 54 civilians and 2 officers.

Completion of the consolidation into a new North Central Division, is scheduled for Sept. 1 of this year. Headquarters will be in the Rand-McNally building, 536 S. Clark St., Chicago.

Benefits of the merger, according to Army Engineers, include a saving in operating expenses of $100,000 annually. Other advantages that have been mentioned are a strengthening technical staff and greater utilization of available professional engineering talents in the two divisions.

The consolidation will not alter the current locations and functions of the various districts in the three affected divisions. The St. Louis District Office will be placed under the division headquarters at Vicksburg, Miss. And the district offices at Rock Island, Ill., and St. Paul, Minn., will be placed under the new North Central Division at Chicago. The Regional Statistics Office at Detroit, which operates under the Great Lakes Division, will be tranferred to the new division office at Chicago.

Col. Wendell P. Trower, now Great Lakes Division Engineer, will head up the new North Central Division.

No announcement has yet been made of the new assignment for Col. Delbert B. Freeman, division engineer at St. Louis. Brig. Gen. John R. Hardin is division engineer at Vicksburg.

Authority picks engineers for St. Lawrence Power

Engineers for the U. S. part of the $600 million St. Lawrence Power Authority of the State of New York have been named.

Uhl, Hall and Rich, Boston, will design and supervise construction of the hydroelectric project. Praeger-Kavanagh, New York, will design temporary and permanent bridges at Barnhart Island and a highway bridge across the Grass River.

Sargent-Webster-Crenshaw & Falley, Syracuse, will design the power authority buildings on Barnhart Island, while Gilmore D. Clarke of New York, will have responsibility for general site planning.

Congress authorizes 165 projects in $1-billion omnibus flood control bill

Congress last week sent to the White House a $1-billion omnibus authorization bill for flood control and rivers and harbors. First such measure since 1950, the bill authorizes 165 projects with a total estimated cost of $1,072 million.

Included are 22 beach erosion projects, set up in a special section of this bill for the first time. The beach erosion projects add up to the relatively small cost of $14 million, in the total authorization.

Biggest share of the estimated costs goes to flood control projects. The bill authorizes 39 of these projects in 40 states and Alaska, costing $731 million.

In addition, the bill establishes construction authority for 104 rivers and harbors jobs that are estimated to total $327 million.

Construction money for all the authorized projects will have to be voted later. The authorization measure merely grants congressional approval for future construction of these projects when Congress decides that work should be started on them.

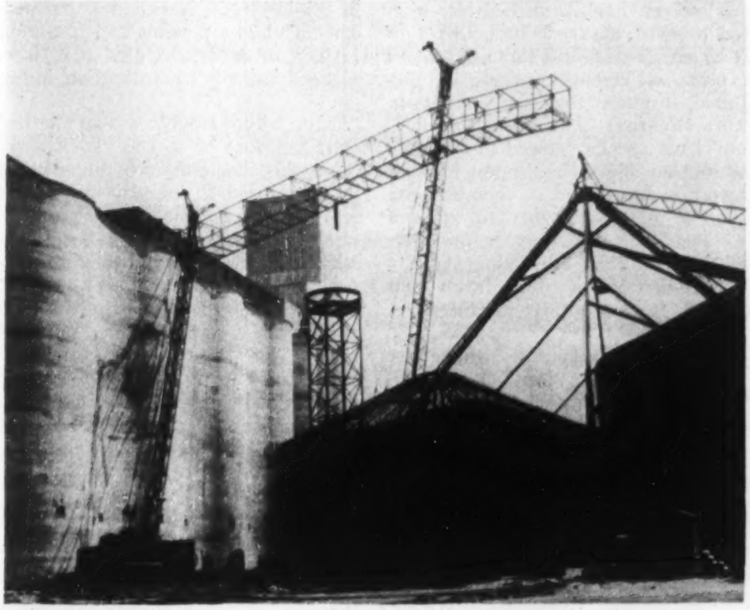
On the controversial $91-million project for deepening the Delaware River to Trenton, N. J., Congress went along with the Senate recommendation that the entire cost of the project be borne by the federal government.

This decision relieves local interests—particularly the U. S. Steel Corp. —of contributing some $17 million to deepen the proposed channel above Philadelphia from 35 to 40 ft.

The Army Engineers had suggested local participation, but Congress voted to follow precedent by letting the government pay all costs. That is standard procedure for federal navigation projects.

• **Big projects**—Nine projects with power features account for more than $400 million of the total authorized. Three dams in the new bill are authorized for local participation in partnership projects in Oregon. They are Cougar, Green Peter and White Bridge Reservoirs, to cost more than $95 million in all, with a total installed power capacity of about 120,000 kw.

Other authorized projects that include power are the Lower Cumberland in Tennessee and Kentucky ($161 million and 130,000 kw), the Osage River in Missouri (two dams costing $63 million, with 14,000 kw), the White River in Arkansas (also two dams, $82 million and 128,000 kw), and the Brazos River in Texas ($22 million and 19,000 kw).



It took 15 minutes to put this bridge in place

Two cranes were used to "walk" a 125-ft structural steel conveyor bridge into place between two groups of grain storage bins in a $3-million grain elevator construction job at Granite City, Ill. The bridge was fabricated on the ground, and each end was hooked to a crane—one with a boom of 120 ft, the other with a 105-ft boom. Each crane was equipped with an additional 15 ft of jib. When the cranes had raised the bridge, the crane with the longer boom was moved in a 125-ft arc around the other one to set the near end of the bridge into position. The bridge was bolted into place 15 min. after it left the ground. Fruin-Colnon Contracting Co., St. Louis, handled the job for Cargill, Inc.

School grants continued for federal impact areas

School construction grants to federally affected areas will continue for another two years under authority voted by Congress during the closing days of the session. Some $60 million will be asked of the new Congress next year in order to finance the extended program.

Congress in the last two fiscal years appropriated $140 million to finance an earlier extension. This sum is sufficient to take care of eligible applications up to the former cutoff date of June 30, 1954. However, it will be necessary to provide additional money to carry the program forward to June 30, 1956.

Appropriations provided for under the original 1950 act—prior to the first extension—amounted to nearly $400 million.

The total money that has been voted so far, therefore, adds up to almost $540 million.

Two turnpike authorities announce bid information

The Massachusetts Turnpike Authority has announced it will advertise for bids on bridge construction for the proposed 123-mi, east-west toll highway across the state early next month.

The highway is expected to be completed in two years. Construction contracts will be for sections averaging about five mi with separate contracts being awarded for large bridge structures.

Eleven engineering firms have been named to draw up contract specifications.

The Carolina-Virginia Turnpike Authority has set Sept. 15 as the date for opening bids on the $3.4-million, 53-mi toll highway. The new road is planned to run along the coast between Virginia Beach, Va., and Nags Head, N. C.

Construction on the road is scheduled to get under way during the autumn.

Completion of the highway is expected to occur late next summer.

Philadelphia tries no-strike pact

Labor, management agree on an arbitration procedure to cover disputes—contract bars all work stoppages

Committees organized under a no-work-stoppage agreement signed in mid-July already were functioning in Philadelphia this week, as the city's construction industry operated under the first such agreement in its recent history.

The new agreement:

- Flatly outlaws work stoppages for any reason, during the life of the contract (to Dec. 1955).
- For what attorneys believe is the first time in construction labor-management history, sets up a permanent, impartial arbitrator who will handle disputes not settled by intermediate procedures.
- Binds the 200 active and associate members of the Philadelphia General Building Contractors Assn., and the members of the 30 building crafts affiliated with the Philadelphia Construction Trade Council to accept arbitration decisions as final.

By agreement on both sides, the new contract does not specifically mention jurisdictional disputes between unions, but other provisions are so worded that even such disputes will be taken care of within the framework of the organization created by the contract.

• **How it works**—The agreement, according to attorneys for both unions and contractor groups, sets up three basic steps for handling employer-union disputes.

First step—if normal negotiations between workers and their employer fail to reach satisfactory conclusion—is for the union representing the workers to notify the Construction Trades Council, 30 days before the expiration of contract in question. CTC officials will then attempt an arbitration on their own.

Second (in the event of failure by CTC to get a satisfactory settlement), a two-man arbitration committee representing management and labor, will be called in to have a try at the situation.

That failing, the arbitration committee will call in the agreed-upon permanent impartial arbitrator—George W. Taylor, of the Wharton School, University of Pennsylvania—whose decision will be final and binding on both parties to the dispute.

• **Floating group**—Meanwhile, an unusual secondary group may step into the negotiations at any time, as observer and fact-finder, and may find a solution short of final arbitration.

This group is known under the agreement as the Joint Conference Committee, a ten-member organization—three representatives each for management and labor, the attorneys for each side, and two secretaries.

Exact functions of this group have purposely been left rather loosely defined, to permit it great latitude in its operations. It is basically a discussion and fact-finding group, however, charged with considering matters that may come up that were not specifically covered in the agreement, making recommendations for improving the agreement when the present term expires.

However, it also can consider matters that are voluntarily brought before it by either side—and these, attorneys expect—will certainly include jurisdictional disputes that may result in work stoppages. The committee does not have specific power to arbitrate or rule on any such disputes brought before it, but it and its members can exercise personal rights to attempt to clear these matters before they reach the formal arbitration stage.

Members of this group already have started twice-monthly meetings.

• **Jurisdictional disputes**—Although, as mentioned above, jurisdictional disputes are not covered specifically as such, attorneys believe that the prohibition against any work stoppages will bring them automatically under the purview of the Joint Conference Committee.

The agreement does provide, however, that jurisdictional matters will be handled by the unions under existing arbitration and settlement agreements (such as the National Joint Board for Settlement of Jurisdictional Disputes in the Construction Industry—the "Dunlop board").

But where unions do not avail themselves of this machinery, the joint committee may step in.

• **Different**—What makes the Philadelphia plan different is its emphasis on an overall labor-management arbitration machinery. Some other cities—notably New York—have long-standing agreements covering jurisdictional disputes that have worked very well in the past.

In New York, however, under the terms of a 50-year-long agreement between the Building Trades Employers Assn., and the Building Trades Council, there is, in effect, a permanent arbitrator. But that arbitrator is the Board of Directors and the Chairman of the Board of the BTEA, whoever they are at the time of the dispute.

• **Hope for improvement**—Both sides in Philadelphia looked to the new agreement as a possible end to a long history of labor disputes that have plagued the city's construction industry.

Most recent trouble was an abortive "strike against a strike" (ENR May 20, p. 30), where other building trades unions staged a one day strike that was actually a protest against a two-week stoppage caused by a dispute between steamfitters and their employers. Steamfitters had demanded that they be assigned all hoisting work in connection with their trade, had been off the job for two weeks and had succeeded in slowing construction work valued at $70 million to a crawl.

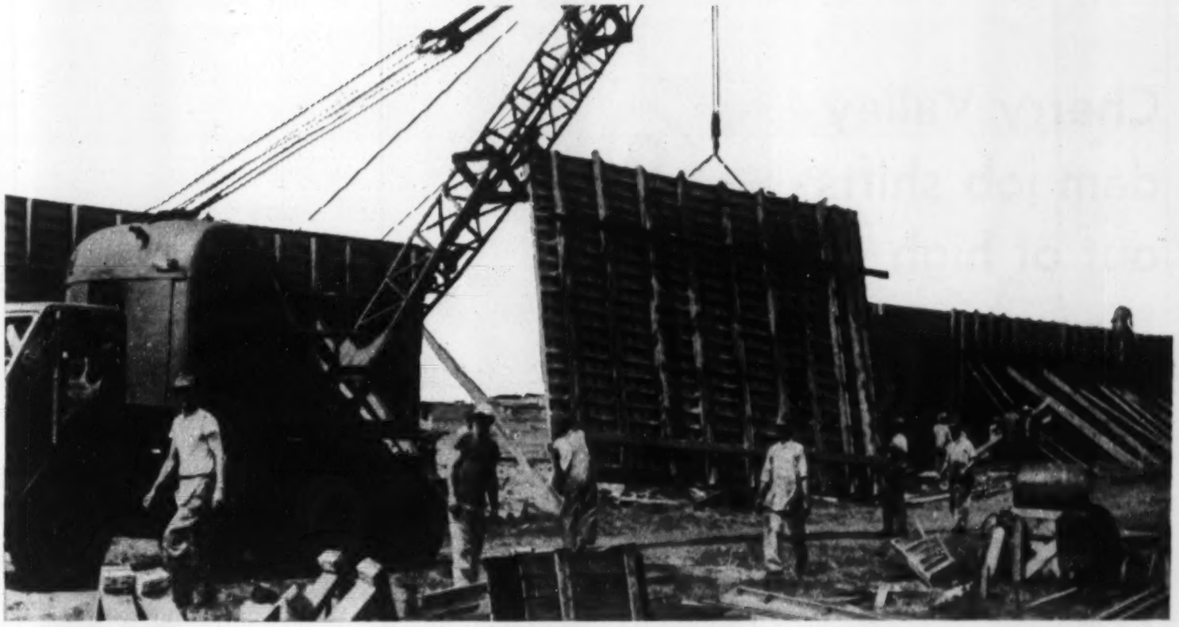
The "strike against a strike" was broken in one day, when Richard J. Gray, president of the parent AFL Building Trades Department, ordered the men to return to work, while the steamfitters submitted their grievances to the National Joint Board.

Labor Briefs

• **End Utica strike**—A 28-day strike of carpenters in Utica, N. Y., ended when rank-and-file members okayed a 17½ cents an hour raise, bringing rates for the trade to $2.82½ cents an hour.

• **Cincy settles**—A 48-day strike that tied up literally millions of dollars of construction work in and near Cincinnati has ended, as ironworkers returned to their jobs under terms of a new agreement.

• **NLRB moves fast**—Finishing up its fiscal year, the National Labor Relations Board had some statistics to report: it had handled 1,217 collective bargaining elections; decisions were issued in 486 cases; the General Counsel issued 168 complaints.



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Cherry Valley dam job shifts out of high

It started off as a race against time—It slowed, here's why

THE BIG PUSH was to move 3,000,000 cu yd of impervious material and . . .

TO PUT A CORE INTO THIS ROCKFILL DAM—There were hopes it might have been a one-season operation.

All bets are off.

It had shaped up as a real do-or-die struggle—contractor vs. calendar—as the men of Guy F. Atkinson Co. first tackled this summer's work on Cherry Valley Dam.

Cherry Valley is a 7,000,000-cu-yd rock fill, with an outsized impervious core, being built deep in Stanislaus National Forest on the west side of California's Sierra Nevada. The dambuilders' goal was to get all 3,000,000 cu yd of impervious earth core placed before next winter's wet weather shuts down the earthfill operation.

But it's no contest now.

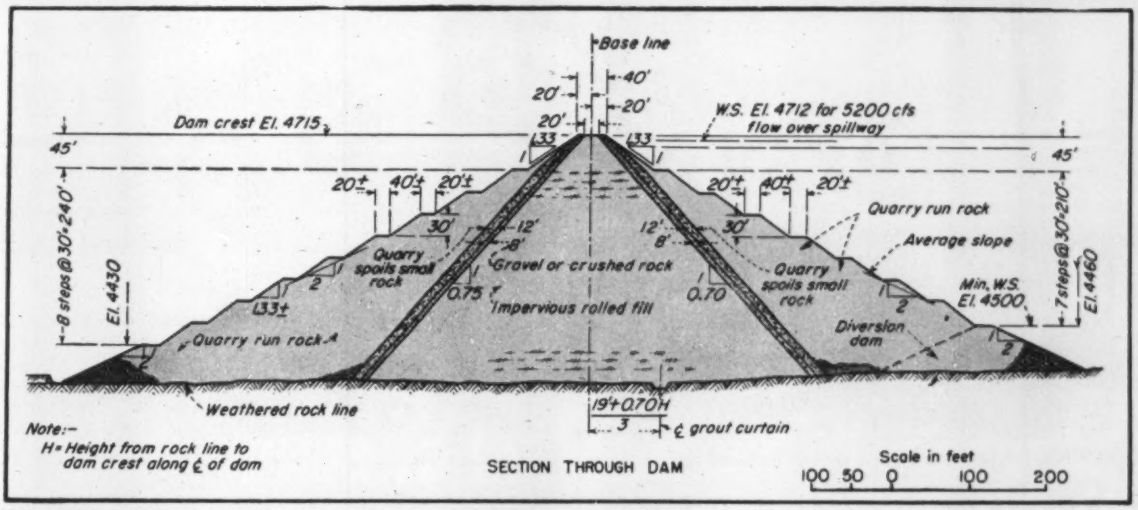
Trouble with moisture in the biggest borrow pit slowed the operation down just as it was getting up to speed. Maybe the slow-down would have been avoided if a bigger area had been opened up to permit drying; and maybe not.

What might have been is past recapture. But discretion, in this case, has been the better part of valor. Atkinson, having conceded, will come off better in the long run than he might have in choosing to run the race against the odds as they had stacked up.

It really wasn't a matter of life and death anyway. Only money is involved.

Atkinson bid about $1.3 million low (under the second bidder) to get this $7.2 million contract at Cherry Valley. San Francisco's Public Utilities Commission and the federal government (which will pay about $9 million of the $14.4 million cost of this water supply-flood control project) are getting a bargain. And Guy F. Atkinson Co. is getting a good test of its ability to bring modern methods and efficiency to a remote construction site.

One way to pass the test with flying colors might have been by putting in the whole impervious core in one season. Now, Atkinson will try to skin


Base line
20'
40'
20'
20'
W.S. El. 4712 for 5200 cfs flow over spillway
Dam crest El. 4715
45'
33
1
45'
8 steps@30'=240'
20'±
40'±
20'±
30'
12'
8'
Quarry spoils small rock
Gravel or crushed rock
0.75
Impervious rolled fill
0.70
Quarry run rock
Average slope
Quarry spoils small rock
2
Min. W.S. El. 4500
7 steps@30'=210'
El. 4460
El. 4430
1.33±
Quarry run rock
Diversion dam
Weathered rock line
19'+0.70H
3
℄ grout curtain
Note:-
H=Height from rock line to dam crest along ℄ of dam
SECTION THROUGH DAM
Scale in feet
100 50 0 100 200

IT'S A BIG CORE—Availability of impervious material led designers to use bigger-than-normal core, forming composite section.

EARTHFILL AND COMPACTION are still the crucial part of the work.

the cat another way. The decision came late last month. The work force has been cut, and a two year schedule has been set.

• **It's a camp job**—Nobody but lumbermen had much business in Cherry Valley before this dam job. The site is just over the hill from Lake Eleanor Reservoir, only 7 miles northwest as the crow flies from Hetch Hetchy Reservoir, and close by Yosemite National Park. But for the dambuilders, it is 25 winding miles by improved logging road down to the Big Oak Flat approach to Yosemite; and it's still another 33 miles down tortuous Big Oak Flat Road to the railhead at Chinese Camp.

Luckily, last winter was mild in the mile-high mountains feeding Cherry River, and work on the floor of the valley (El. 4,400) went practically uninterrupted. Earlier contracts were wound up (stripping and grouting, $752,000, with Owl Trucking & Construction Co. of Compton, Calif.; diversion tunnel and future power tunnel stub, $630,000, with Ralph Bell and Ukropina-Polich-Kral, San Gabriel, Calif.). And Atkinson, awarded the dam last August, got in and got a good headstart on this construction season.

• **Getting rolling**—By May, the main camp and two family trailer camps were set up and there were 350 of an eventual 600 workers on the job. Construction was in second gear, about to shift to high. The big impervious borrow area was still being stripped; a high-speed haul road upstream to the filter material deposit was being built to double as an airstrip to tie the remote site closer to civilization; one quarry was operating and the second (of an eventual five) was being opened. Most of the big equipment was moved in for doing the job.

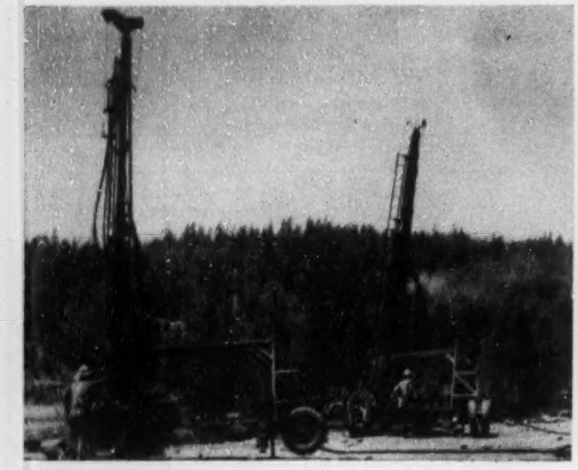
Then it was all high gear. The earth movers were pounding down the haul roads at a 30- to 35-mph clip, pouring in the dirt for roller-compaction as the rock envelope was dumped and jet-compacted around it.

• **Bastard embankment**—This is a different dam in that its section has more impervious core than is usual. It is actually a composite earth and rockfill, 320 ft high and 2,635 ft long at the crest.

Design was dictated by economics—by availability of material at the site. An abundance of decomposed granite—impervious when compacted and half the in-place unit price of rockfill—led designers to use as big a core as practical. They retained rock enough in the section to permit stability with relatively steep side slopes; this meant least volume of total material in the section. A dam entirely of impervious material might have been built, but its necessarily flatter slopes and broader base width would have required a longer diversion and outlet tunnel. The composite embankment section finally designed by engineers of San Francisco's Public Utilities Commission is a logical compromise on tunnel and fill prices.

The tunnel is done. Now it is all fill.

(Continued on page 32)



ROCK DRILLING is by new carriage-mounted rig.

ROCK SLUICING is by new tractor-mounted monitor.

• **It was a challenge**—Nobody ever said Atkinson had to put in all the impervious material before next winter calls the halt. Nobody speaking for Atkinson promised it would be done. But it was a kind of challenge the project management recognized and unofficially accepted.

Earthfill operations got up to 7,000 cu yd per shift. The arithmetic of the problem proved 10,000 cu yd per shift would have to be the average over six months—starting in May—if the earthfill operation were not going to spill over into another season.

Repeat: Nobody said this average would be kept. But the sights were aimed at production of 30,000 cu yd per day; and such production could have done the trick.

Then came the trouble with the extra-moist impervious material.

• **Specs call for results**—The method of compaction has not been specified by the Public Utilities Commission or their consultants—only the degree. The contractor has to scarify before beginning a new layer and keep the layers to 6 in., but it is up to him to get the specified degree of compaction by whatever means he chooses. Inspectors, therefore, will not have to be on the embankment continually counting roller passes; they need only be concerned with results as determined in the laboratory by test.

Results required: 100% of tests must show a field density greater than 90% of maximum density of the soil; 90% of the tests must show soil density at greater than 91% of its maximum; 50% must exceed 94% of maximum.

Means of getting these results are up to Atkinson. He has one 100-ton and two 50-ton pneumatic rollers on the work, plus four sheepsfoot rollers. Heavier rollers are available, if needed. In addition to the regular rolling, he will route hauling equipment over the fill to best advantage for extra compaction.

• **Well equipped**—Atkinson has plenty of hauling equipment on the job. There are 14 hauling scrapers built up to 18-cu yd capacity; 8 tractor-drawn bottom-dump wagons of 30-cu yd capacity; 20 20-ton rear-dump trucks, 10 with hydraulic transmission and retarder mechanism; six 13-cu yd bottom-dump trucks.

At the loading end of the haul there are a 6-cu yd shovel, a 5, a 4, a 2½ and a ¾; two 2½-yd draglines; one elevating loader; four heavy bulldozers as pushers on the scrapers; plus 16 more heavy bulldozers as earthmovers in the borrow area and on the embankment.

In the quarries there are eight 4-in. blast-hole drills. These carriage-mounted tools—the next step up from the wagon drill—are having their first big application on this job. They are going down 60 ft into the granite being blasted out for rockfill. The contractor is making up his lengths of hollow drill steel on the job—a situation with which he is not entirely happy. It means he has had to set up a more-extensive-than-usual blacksmith's shop to work on the 20-ft lengths of drill steel brought into the job; ends must be heated, up-set and threaded inside to receive a special nipple connector.

• **Second first**—Another first on this job in the way of equipment is use of three hydraulically aimed monitors, mounted on small tractors or skids, for the jet-compaction of rockfill. The operator merely sits on the tractor seat at the controls of four hydraulic valves which move the monitor up, down, left or right. Hydraulic pressure for the controls is tapped off the 8-in. water delivery line to the monitor, mounted on the side of the tractor. Water in this line is at 100-psi pressure, and the monitor nozzle puts out water at 4 cfs. For every volume of rock placed on the dam, three times the volume of water is used in compaction—jetting it into place and washing out fines.

Tractor-mounting (rather than skid mounting) gives the monitor some mobility; the tractor has a boom on its rear end with which the operator can hoist the pressure hose out of his way in maneuvering about for a new or better firing position on the rockfill. But the contractor has found that a tractor huskier than the one picture is needed to handle the heavy hose lines.

Water is fed to the monitors and supplied for other uses from two 440-hp pumps on a mid-stream log crib below the dam. Power is fed to the pumps and supplied for other uses by an 8-mile transmission line with about 2,000-kw capacity. Atkinson has installed a stand-by power plant with two 1,000-kw ac generators driven by 5 diesel engines, all V-belt connected to the same shaft.

• **River diversion**—Cherry River is now blocked off by a cofferdam that will become part of the dam's upstream toe. The stream pours into a 16x17-ft temporary opening in the base (all that's completed) of the concrete intake structure.

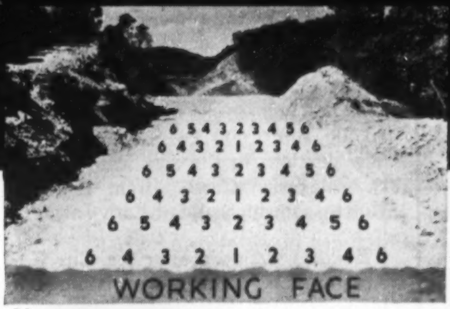
Right now the flow is down around 200 cfs. Maximum flow of record at the damsite is 18,000 cfs; the other great extreme is a 5-cfs trickle to which the mountain creek has been known to dwindle.

• **Money saving schemes**—The 16-ft dia tunnel under the dam has been built as a pressure conduit with a steel liner having a 15-ft 4-in. inside diameter. The 20-ft diameter intake

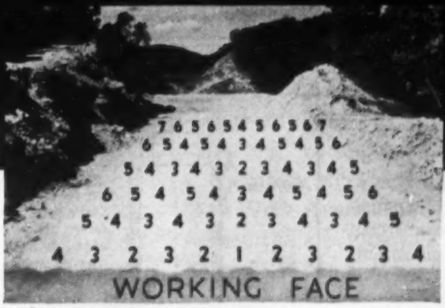
(Continued on page 34)

Piled right for easy digging ...with ROCKMASTER®

TYPICAL ROCKMASTER LOADING PATTERNS FOR THOROUGH-CUT BLASTING


6 5 4 3 2 3 4 5 6
6 4 3 2 1 2 3 4 6
6 5 4 3 2 3 4 5 6
6 4 3 2 1 2 3 4 6
6 5 4 3 2 3 4 5 6
6 4 3 2 1 2 3 4 6
WORKING FACE

Alternate


7 6 5 6 5 4 5 6 5 6 7
6 5 4 5 4 3 4 5 4 5 6
5 4 3 4 3 2 3 4 3 4 5
6 5 4 5 4 3 4 5 4 5 6
5 4 3 4 3 2 3 4 3 4 5
4 3 2 3 2 1 2 3 2 3 4
WORKING FACE

Alternate Progressive

This is the kind of breakage and displacement that means economical handling for the contractor. With the ROCKMASTER Blasting System, close control over throw and maximum breakage was obtained by Condon-Cunningham Co. and Peter Kiewit Sons Co., contractors for part of the new West Virginia Turnpike.

The diagrams above show typical ROCKMASTER loading patterns for thorough-cut blasting. The holes are loaded with the earliest delays in the center with successive delays located progressively to the edges of the cut. As the blast is fired, the first delays give relief to the following holes and movement of the burden is toward the center of the blast area. You can see it in the second photograph . . . movement is in, not out. And the breakage was so thorough this pile was "panned" out.

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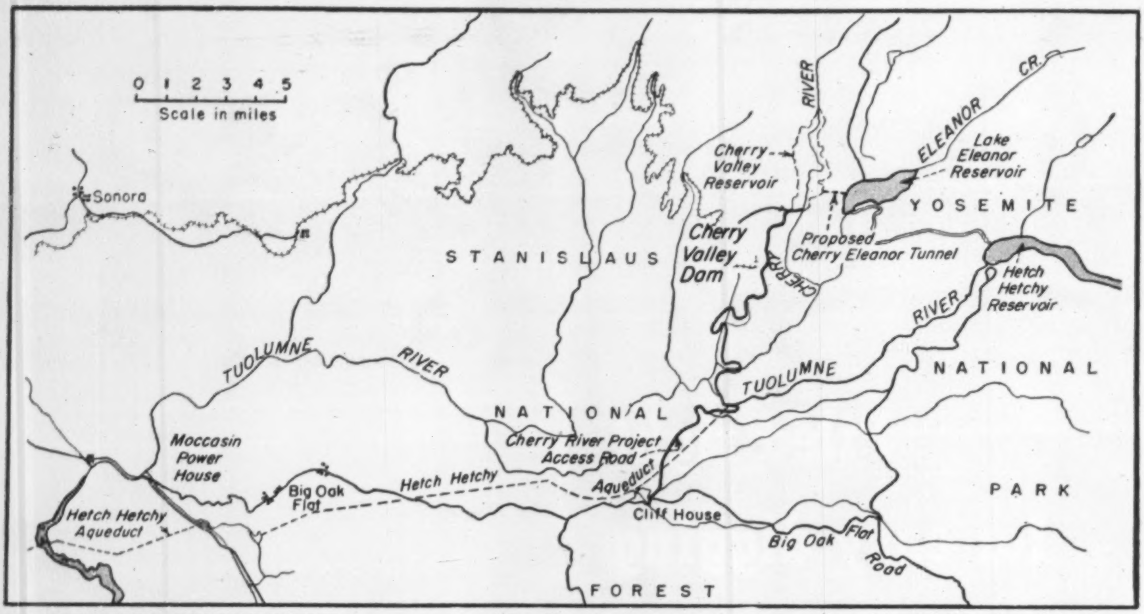

0 1 2 3 4 5
Scale in miles
Sonora
STANISLAUS
NATIONAL
FOREST
TUOLUMNE RIVER
Moccasin Power House
Hetch Hetchy Aqueduct
Big Oak Flat
Hetch Hetchy Aqueduct
Cherry River Project Access Road
Cliff House
Big Oak Flat Road
Cherry Valley Reservoir
Cherry Valley Dam
CHERRY
RIVER
ELEANOR CR.
Lake Eleanor Reservoir
Proposed Cherry Eleanor Tunnel
YOSEMITE
NATIONAL
PARK
Hetch Hetchy Reservoir
TUOLUMNE
RIVER

CHERRY RIVER DEVELOPMENT is an extension of San Francisco's water and power system—with added flood-control purpose.

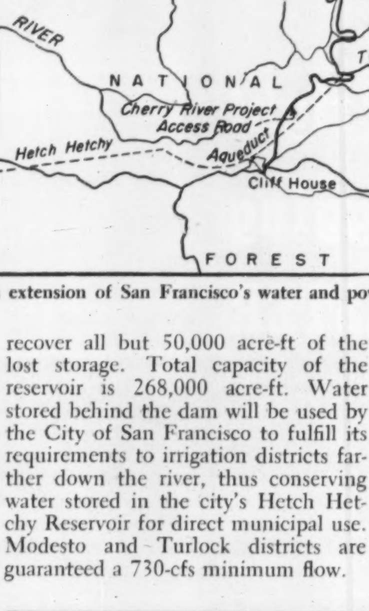
will be built up from its present low construction joint to a height 100 ft above streambed but still about 200 ft or more below maximum lake level. The submerged intake and pressure discharge combination is credited with a saving in construction cost of close to a million dollars. More savings were realized in formwork costs by using a square cross-section in the elbow between circular intake and circular tunnel. Transition from circle to square and back to circle was judged to introduce no problem of hydraulics.

Entering the base of the intake from upstream is a 30-in. corrugated metal pipe through which minimum required flows will pass. When the intake has been built up to full height, and in a period of low flow, a small dam will be placed to divert the stream into this pipe, permitting placement of a concrete plug in the 16x17-ft opening in the intake through which the river now flows.

• Intake operation—The completed submerged intake will be capable of unwatering the discharge tunnel. It will be possible to draw the reservoir down to the level of two 24x48 in. sluice gates in the base of the structure, and make necessary inspections.

Drawdown of the reservoir for tunnel inspection will be made only in years when snow surveys and runoff estimates indicate the reservoir can be refilled by the spring runoff.

The hydrology of the reservoir is such that the reservoir can be refilled by spring runoff in one year out of five. In about half the years (of 33 years of record) it would be possible to recover all but 50,000 acre-ft of the lost storage. Total capacity of the reservoir is 268,000 acre-ft. Water stored behind the dam will be used by the City of San Francisco to fulfill its requirements to irrigation districts farther down the river, thus conserving water stored in the city's Hetch Hetchy Reservoir for direct municipal use. Modesto and Turlock districts are guaranteed a 730-cfs minimum flow.


Horiz. trash rack
Hydraulic mechanisms for sluice gates
El. 4538.83
El. 4520
Platform
Note: Sluice gates normally closed, opened only when pool is to be lowered below El. 4520
2'-0"
20'-0" I.D.
2'-0"
Concrete plug
16'x17' opening
El. 4460
El. 4445
El. 4449
2-24x48 sluice gates
Transition
El. 4439
Back fill
El. 4430
16'x16' sq.
30" C.M.P.
16'0" I.D.
Temporary dam to divert flow through C.M.P. while placing 16'x17' concrete plug
10'-0" Transition
Sta. 5+94
Sta. 5+82
Sta. 5+80
SECTION ALONG ℄

SUBMERGED OUTLET — economy choice—will permit periodic unwatering of tunnel without serious loss of storage.

• Future integration — San Francisco also has other plans for tying this reservoir more tightly into its Hetch Hetchy water and power system. A short (one-mile) tunnel is planned for diversion of Eleanor Creek water into Cherry Valley Reservoir; Eleanor Reservoir has less capacity than its watershed has runoff.

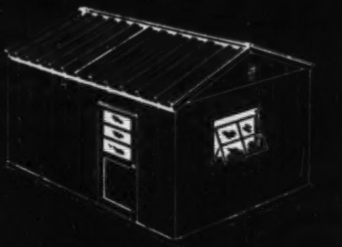
A second tunnel in Cherry Valley's future would take water at the downstream end of the present tunnel under the dam and develop a 2,000 ft power head with it six miles away on the Tuolumne River. This would add some 60,000 to 80,000 kw to the 80,000 and 3,000 kw San Francisco now develops in the area respectively at Moccasin Creek (from Hetch Hetchy aqueduct) and at Early Intake.

• Builders, designers—For the Guy F. Atkinson Co., A. H. Steiner is project manager, Errol Platt is assistant project manager. Ray N. Atkinson is assistant general superintendent. Joe Canto is day shifter; V. A. Chapman is night shifter; Hank Quade is project engineer.

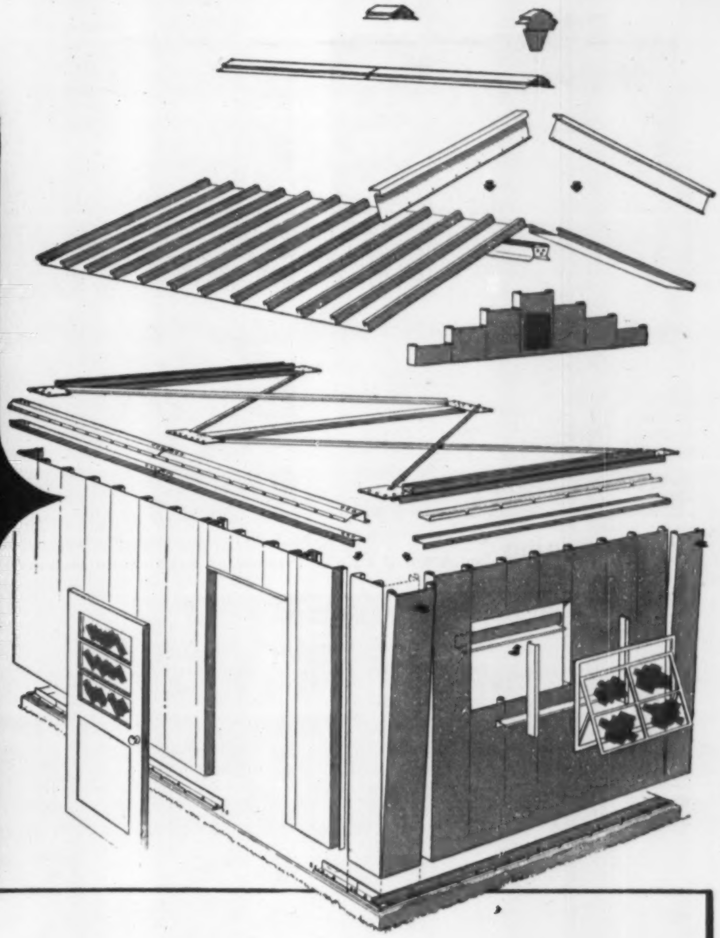
For the Public Utilities Commission, City and County of San Francisco, Oral Moore is resident engineer at the job. H. E. Lloyd is manager and chief engineer of the Hetch Hetchy water supply. Wesley F. Getts has been in direct charge of the Cherry Valley Dam project design.

A board of consultants for the project has been comprised of Walter L. Huber, A. Kempkey, and I. C. Steele. Prof. John K. Vennard of Stanford University was retained as special consultant on spillway model studies.

Here's why Armco Buildings



are easy to erect



In this "exploded" assembly drawing, you can see why Armco Steel Buildings go up quickly. A small crew, without previous erection experience, can handle the whole job. Installed cost is low.

Assembly is principally a matter of fitting the unique STEELOX panels together to form walls and roof. Windows and doors can go almost anywhere. Bolts, inside of building, join sidewall panels at top and bottom.

Drawing also shows how STEELOX panels provide both structural support and smooth exterior with the same unit. In sidewalls, you save framing and exterior covering. On the roof, the panels replace rafters, sheathing and roofing. Assembled buildings are strong, wind- and weather-tight. And remember, steel won't burn.

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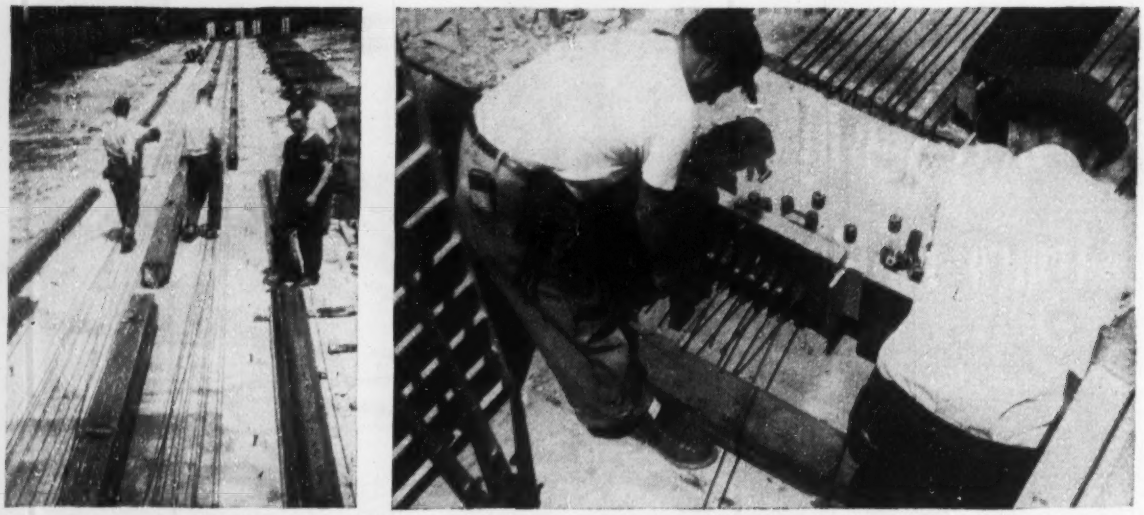
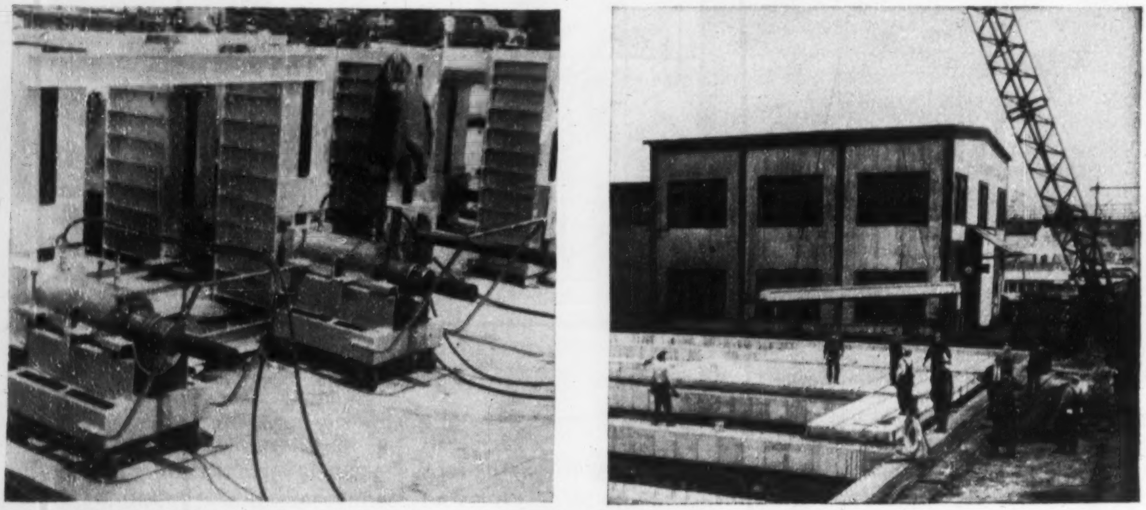


Pretensioning CONCRETE STRINGERS for a marginal wharf on the Hudson River were fabricated on a 222-ft long bench ten at a time. Prestressing strands were anchored with steel wedges at the ends of the bench (right).



HYDRAULIC JACKS pull steel rods (left) to tension the strands, which were then embedded in the stringer concrete. The stress was transferred to the concrete 40 hours later. Stringers were placed side by side on pile caps to form the wharf deck (right).

Suspended-span deck for wharf prestressed

Prestressed, precast concrete beams set side by side on pile caps form the concrete deck of a marginal wharf on the Hudson River at New York City. The center portion of the deck is suspended-span construction, with stringers supported between the ends of cantilevered girders.

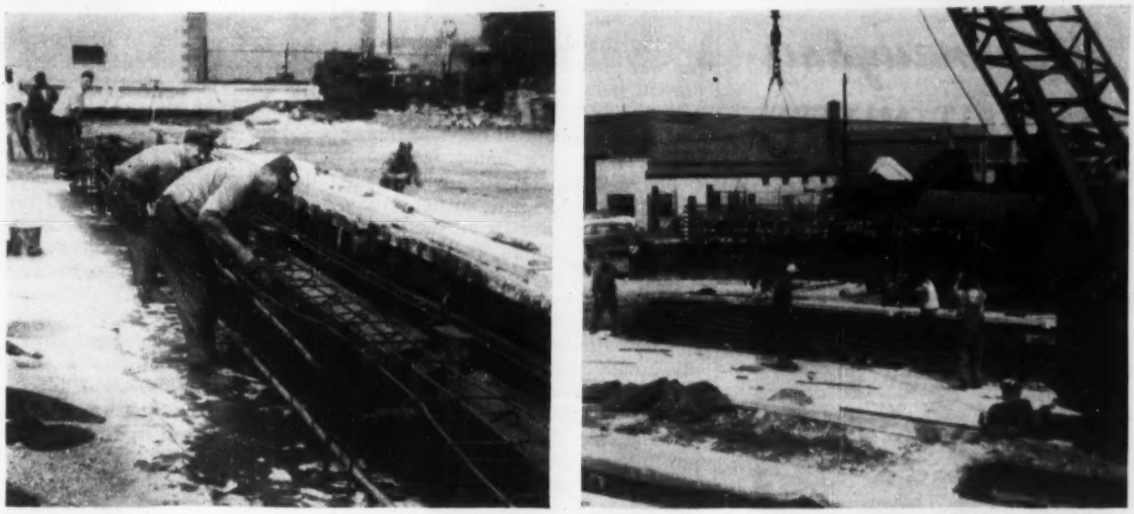
The new wharf, being built for the city's Department of Marine and Aviation by the Port of New York Authority, is a replacement of an existing pier that is to be removed to permit construction of a third tube for the Lincoln Tunnel, which is operated by the PNYA. Built around the tunnel's ventilation shafts and straddling the two tubes of the tunnel, the prestressed structure is 442 ft long, extending between 38th and 40th Streets in midtown Manhattan. It projects 100 ft beyond the present bulkhead.

Merritt-Chapman & Scott Corp., the general contractor, had to drive piles for the wharf with precision alongside the tubes to avoid damaging them. The piles were cut off about 10 ft above mean water level and concrete pile caps cast in place on top. In the suspended-span central portion of the wharf, pile bents are spaced 43-32-43 ft c-c. In the other sections, the gaps are 16 and 18 ft and are spanned by pretensioned concrete stringers.

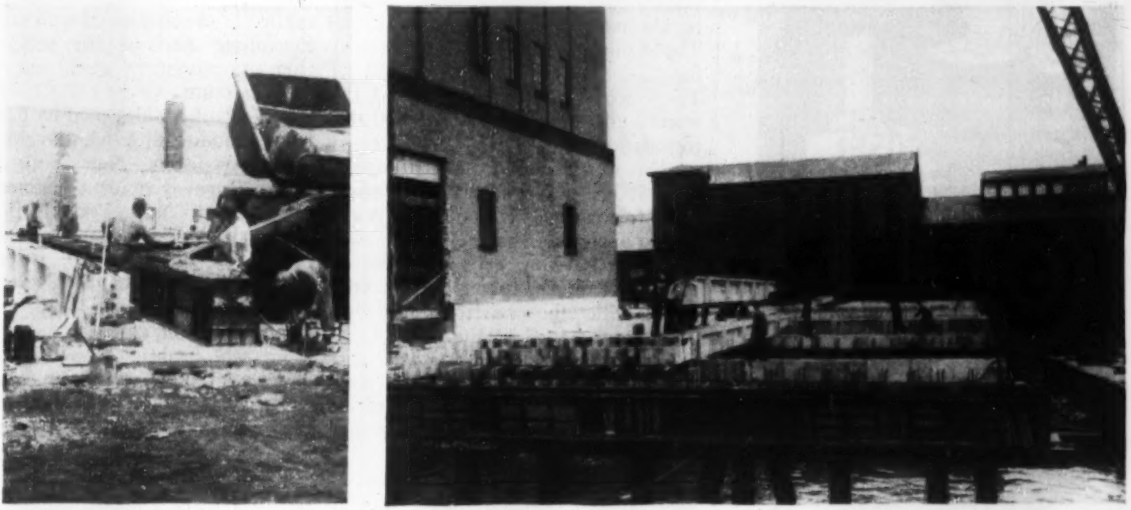
• **Cantilevered girders**—The suspended spans are composed of 62-ft-long post-tensioned concrete girders and pretensioned stringers. The girders span across the 43-ft openings and project 7 ft into the 32-ft central span, to support 18-ft stringers on the ends. The opposite ends of the girders cantilever 11½ ft to pick up stringers.

Suspended-span construction offers many of the advantages of continuity, since reverse bending caused by the cantilevers partly offsets positive bending moments near midspan. Yet, prestressing is not as complicated for suspended-span construction as for continuous beams, because the curvature of the tendons need not be reversed as frequently.

The deck was designed for a super-



Post-tensioning GIRDERS were prestressed with steel bars sheathed in flexible tubing to prevent bond with the concrete. Forms made of plywood and bevelled timber bolted to steel frames were positioned after the bars were placed.



PLANT-MIXED CONCRETE was placed in the girder forms from a dump truck. When prestressed, the girders were placed on the pile caps (right), projecting 7 and 11½ ft into adjoining spans to support the ends of stringers.

imposed load of 450 psf or a H20 truck. All members were fabricated by Precrete, Inc., in a plant in the Astoria section of the city, near the East River.

• **Pretensioning**—Stringers were produced on a 222-ft long bench designed with the assistance of the Freyssinet Company, New York City. The bench is capable of fabricating a wide variety of sizes and shapes—5 ft wide channel slabs or 4-ft deep bridge girders, if desired. End abutments can resist prestressing forces of 400 tons applied 6 in. above bed level or 200 tons 12 in. above.

The casting bed is a 6-in.-thick, wire-mesh-reinforced concrete slab with longitudinal stiffening ribs. Its length permits simultaneous forming of ten 18-ft stringers or eleven 16-ft stringers in each of two rows.

At the anchorage end, the prestressing steel is held against a 1½-in.-thick steel templet, which spans vertically between a 2½-in.-thick plate and an angle at the edge of the casting bed. The 2½-in. plate spans horizontally between 24-in. I-beam uprights.

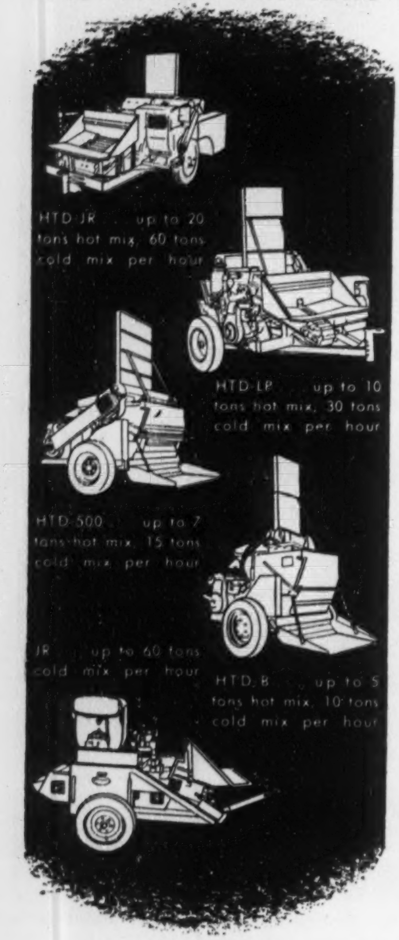
At the jacking end there are two similar uprights on each side of the two production lines. A threaded 3½-in. dia, alloy-steel pulling rod passes between each pair of uprights. One end of each rod can be attached to a 200-ton double-acting centerpull jack, which can push against an upright. The other end can be fastened to a sandwich plate, which transmits the pull from the jack to a templet to which the prestressing steel is anchored. A nut on the rod between uprights, when tightened, prevents movement of the rod, permitting the jacks to be removed for re-use in stressing the strands in the adjoining bed.

The prestressing steel consists of 7-wire, 5/16-in. dia, stress-relieved strands with a minimum breaking strength of 15,000 lb. Up to 28 strands were required per stringer. At both ends of the pretensioning bed, these tendons were anchored to the templets with steel jaws wedged into steel casings, which could be salvaged at the end of a production cycle. Stretched to a computed elongation of 17½ in., the strands were stressed 10,000 lb apiece.

The stringers are nearly rectangular in section, 29 in. wide by 11 in. deep, with grooved sides. Each set of forms for these members consisted of three pairs of side panels and a pair of end dams, perforated to per-

(*Continued on page 38*)

McConnaughay
ASPHALT MIXERS


HTD-JR . . . up to 20 tons hot mix, 60 tons cold mix per hour
HTD-LP . . . up to 10 tons hot mix, 30 tons cold mix per hour
HTD-500 . . . up to 7 tons hot mix, 15 tons cold mix per hour
JR . . . up to 60 tons cold mix per hour
HTD-B . . . up to 5 tons hot mix, 10 tons cold mix per hour

. . . for resurfacing and patching in any season

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K. E. McConnaughay
LAFAYETTE, INDIANA

mit the strands to pass through. Paper was placed on the casting bed to prevent bond of the stringer concrete with the bed.

The forms, built of bevelled timber bolted to an angle frame, were positioned around the strands and anchored to the bed with anchor screws. Concrete was placed in them, embedding and bonding to the strands. The next day, the forms were stripped and set up alongside on the bench for another group of stringers. When the concrete attained a strength of 3,500 psi—usually about 40 hours after casting—the tension in the strands was released and the wires between stringers cut. A 20-in. length was left protruding from the ends of the members to provide for continuity over supports.

• **Post-tensioning**—The girders for the suspended-span section of the wharf have a modified I-section 30 in. deep. Top flange is 21 in. wide, bottom flange, 14 in., and web 5 in. thick. They were prestressed with cold-worked alloy-steel bars having tapered threads on the ends. Three 1⅛-in. dia bars were required for each girder, plus 500 lb of mild-steel reinforcement for diagonal tension and stresses due to anchorage.

The prestressing bars were placed in flexible metal tubing to prevent bond with the concrete initially. They were draped in the forms in a vertical curve in accordance with anticipated variation in bending moments—near the bottom of the girders at the center, near the top over the supports and in the cantilevers.

Forms consisted of plastic-faced plywood and bevelled timber bolted to a steel frame. Side panels were tied together with pipe sleeves provided for transverse prestressing on the wharf site. Bottoms were built up under the cantilever ends, which are not as deep as the rest of the member. Eight casting beds were available, permitting daily re-use of the forms for one pair of girders.

Concrete for both pretensioned and post-tensioned beams was mixed by Precast, Inc., at a nearby plant and hauled to the Precrete yard in dump trucks, which placed the concrete directly into the forms. The mix contained 7.15 bags of air-entraining high-early-strength cement, with ¾-in. crushed stone and sand, and had a 3 to 4-in. slump.

Specifications permitted the total prestressing force of 100,000 lb per bar to be applied when the concrete attained a strength of 4,200 psi, as indicated by test cylinders. To expedite prestressing, however, one of the three bars was tensioned at a concrete strength of 3,500 psi, enabling the girder to be moved safely by a crane from the casting bed to storage, where prestressing was later completed.

The bars were stretched to a computed elongation of 3⅛ in. with hydraulic jacks acting against the girder ends. Nuts on the threaded bar ends were tightened against anchor plates embedded in the girder ends to anchor the tendons. Then, the bars were grouted in.

• **Erection**—Stringers and girders were delivered to the job by truck and barge. A crane positioned them side by side on the pile caps, with dowels that protruded from the pile caps fitted between bottom flanges. Reinforcing bars were placed in spaces between the ends and sides of the beams and the gaps filled with concrete, tying the deck together. In addition, transverse prestressing was applied in the suspended-span section. Remaining work on the project includes a one-story steel and brick superstructure.

The wharf was designed by Parsons, Brinckerhoff, Hall & Macdonald, consulting engineers, New York City. Joseph Gavin is resident engineer for the Port of New York Authority, John M. Kyle, Jr., chief engineer. Alonzo K. Burnham, Jr., is project manager for M-C & S, Everett M. Allgor, superintendent, and David Luprian, project engineer.

Precrete facilities were engineered by George Pinter, consulting engineer. Innis O'Rourke, Jr., was in charge of the project, J. Johnson, plant superintendent.

Downstream escape for fish—a current problem

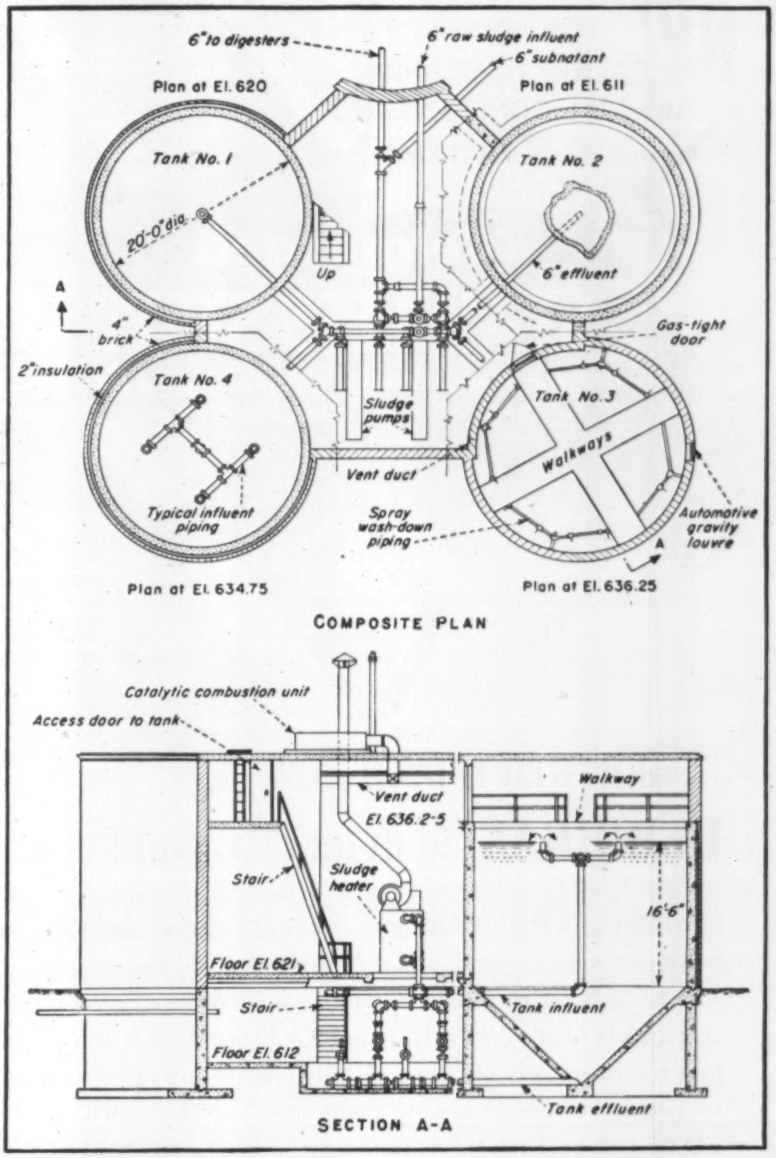
The psyche and physique of silver salmon and chinook salmon fingerlings are under scrutiny by the Washington State Department of Fisheries and the results may influence the design of future hydroelectric dams in that area.

Studies conducted thus far at two Elwha River dams have shown that the method of releasing and controlling water at spillways can have a marked effect on fingerling fatalities. Free falls of 180 ft at one site killed fewer fish than falls of 100 ft at another dam.

Passage through turbines revealed another story however. The higher structure exacted a greater mortality rate than the lower. Turbine speed and blade clearance was the same in both cases. The two biologists conducting the experiment, Dale E. Schoeneman and Charles C. Junge, Jr., concluded that the critical depth of water at which fish suffer mortalities lies between 100 and 200 ft.

Plant adapts Laboon process as sewage treatment tool

Design includes battery of four circular tanks for sludge concentration


6" to digesters
6" raw sludge influent
6" subnatant
Plan at El. 620
Plan at El. 611
Tank No. 1
20'-0" dia.
Tank No. 2
Up
6" effluent
A
4" brick
Gas-tight door
2" insulation
Tank No. 4
Sludge pumps
Tank No. 3
Walkways
Vent duct
Typical influent piping
Spray wash-down piping
Automotive gravity louvre
A
Plan at El. 634.75
Plan at El. 636.25
COMPOSITE PLAN
Catalytic combustion unit
Access door to tank
Vent duct El. 636.2-5
Walkway
Stair
Sludge heater
16'-6"
Floor El. 621
Stair
Tank influent
Floor El. 612
Tank effluent
SECTION A-A

IN THESE TANKS sludge will be concentrated to 12% solids prior to digestion.

First city to apply the Laboon process—concentration of sewage sludge by floatation under controlled temperature—will be Charlotte, N. C.

A design by J. N. Pease & Company, engineer-architect firm of Charlotte, is under construction there now as part of a $7 million continuing program of replacements and improvements begun in 1947 on the city's two sewage treatment plants—Irwin Creek and Sugar Creek.

Sludge concentration tanks now under construction at the Irwin Creek plant are designed to operate on the principle of the Laboon process, demonstrated on pilot scale by John F. Laboon, chairman of the Allegheny County Sanitary Authority, Pittsburgh, Pa. (ENR Oct. 11, 1951, pp. 21 and 30). A $17.6 milllion, 150-mgd sewage works for Pittsburgh and its environs has been designed to concentrate raw sludge for incineration (ENR Oct. 1, 1953, p. 30). But Charlotte's smaller application will be installed first.

George S. Rawlins, partner in J. N. Pease & Co., investigated desirability of using this process ahead of digestion, as an additional tool in a plant which will be required to treat combined domestic and trade wastes. City officials approved, and Mr. Rawlins went ahead with design.

• **Design evolved**—The design equivalent population (BOD basis) of the plant is 245,000 and the average flow is 11 mgd.

Sludge concentration tanks will receive sludge (raw and excess activated) from the primary clarifiers. The sludge will be heated to 95 F as it passes through an external-type heater before entering the tanks.

There are four tanks, each having a usable capacity of 6,700 cu ft. It is anticipated that one tank will be adequate to take sludge from one day's operations and that they will operate on a fill-and-draw basis, the sludge being held in the tank for two or three days. Operating personnel believe that a concentration of 12% solids is as thick as they will want to handle before transferring the concentrated sludge to the digestion tanks by plunger-type pumps. The feasibility of the use of such pumps has been established by tests.

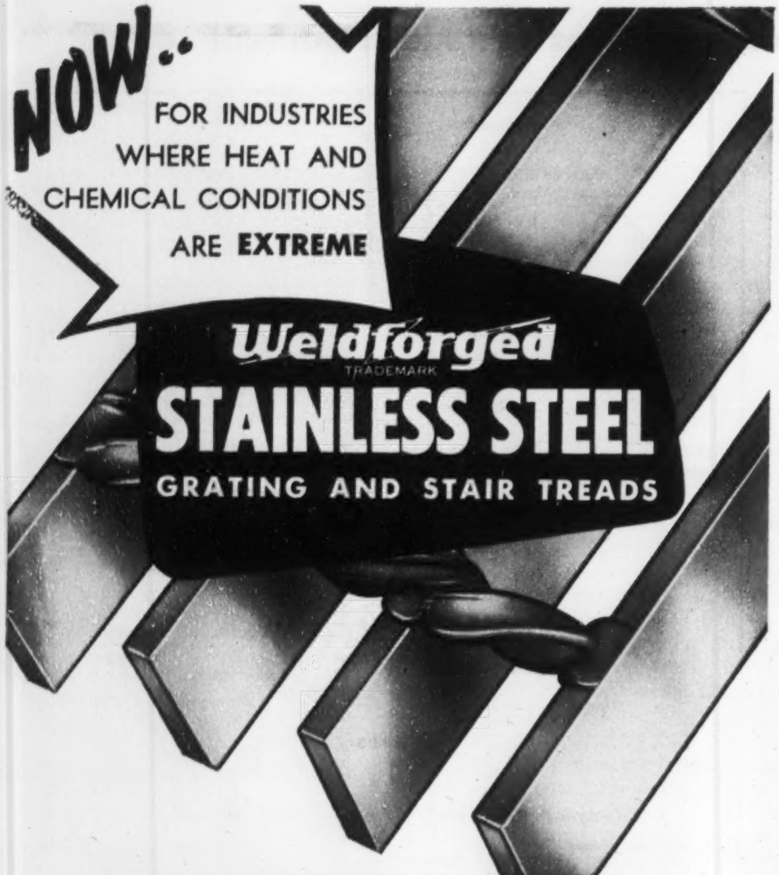
• **Different from Pittsburgh**—Tanks designed for sludge concentration are circular with conical bottoms and are completely closed. (In Pittsburgh they are to be rectangular with v-shaped bottoms.) Sludge will be pumped in at the bottom. At the end of the concentration period, the subnatant will be withdrawn from the bottom for return to one of several points in the plant. Then the concentrated sludge will be pumped to the digesters.

The concentration tanks are to be insulated and it is expected that very little heat will be required to maintain the operating temperature. Additional heat will be obtained by circulating contents through the external heater.

The odor problem requires attention. In Charlotte, as in Pittsburgh, the engineers have used a closed system, but they have made use of an industrial-type catalytic combustion unit, instead of a sludge incinerator, to destroy foul odors. Sewage gas that develops in the digesters will be used for fuel.

Mr. Rawlins believes that the anticipated increase in solids concentration will substantially extend design capacity of the digesters and sludge drying beds. But, due to past history of this plant, no advantage was taken of this

(*Continued on page 40*)



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possibility. Rather, it was deemed advisable to consider these tanks as an added tool to make operation more flexible and dependable.

Another advantage that should accrue to the operation is that the concentrated sludge can be fed to the digesters at very nearly a uniform rate and temperature, thus promoting more nearly optimum conditions in the digesters.

• **Part of program**—The sludge concentration tanks are but a part of a program of stream pollution abatement at Charlotte. The program began with construction of separate sludge digestion and sludge drying facilities at Irwin Creek plant.

A new outfall sewer was also constructed along Sugar Creek to replace an old, inadequate sewer serving the Sugar Creek plant. Charlotte, with a present population of 145,000 and a variety of industries, is situated on two drainage areas and is served by two treatment plants.

In 1952-53, contracts for the enlargement of the Sugar Creek plant were started, followed by contracts in 1954 for a similar program at the Irwin Creek plant. The total program will amount to about $7 million.

An industrial waste ordinance has been passed, making industry a partner in the problem with Charlotte. Enforcement of the ordinance awaits completion of the improvements of the treatment plants.

City officials immediately concerned with construction of Charlotte's sewage works improvements are City Manager H. A. Yancey, W. M. Franklin, superintendent, and R. S. Phillips, assistant superintendent, in charge of plants for the Charlotte Water Department. This agency is responsible for operation of the sewage treatment plants.

The general contractor on construction of the new facilities at Irwin Creek plant is Rea Construction Co. The work should be completed and sludge concentration by this process should start next year.

The whole subject of sludge concentration is one which sewage works designers and operators have had very prominently in mind since the Laboon process came out of the laboratory and went through a series of pilot plant tests. These tests led to acceptance of the idea of sludge concentration for the Pittsburgh plant. And it is the same idea of concentration by flotation which is being adapted by Charlotte.

Meanwhile, a separate but similar idea for concentrating sludge in a thickener has been developed in New York and has been given its first major new-plant application in Beaumont, Tex. (ENR Apr. 29, p. 41).

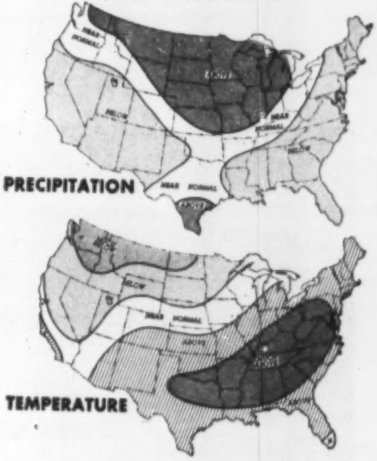
WEATHER

Observed weather in 20 cities, compared with normals

	Precipitation, inches				Temperature, degrees			
	July 1954	Departure fr. normal	7 mos. 1954	Departure fr. normal	Mean July 54	Departure fr. normal	Av. daily maximum	Av. daily minimum
Atlanta	6.31	+1.90	23.11	− 8.72	82.1	+2.6	92.5	71.7
Baltimore	0.18	−2.17	12.43	−11.22	76.6	+0.3	88.7	60.4
Birmingham	3.58	−1.53	25.17	−9.00	83.7	+4.1	95.4	71.9
Boston	2.25	−0.58	33.62	+11.08	72.2	0.0	80.4	63.9
Chicago	4.58	+1.85	23.53	+4.07	76.5	+1.9	86.5	66.4
Cincinnati	2.30	−1.40	19.59	−5.40	77.9	+1.3	90.0	65.7
Cleveland	1.49	−1.55	21.34	+2.40	73.1	−0.6	85.8	60.5
Dallas	0.53	−1.44	16.45	−5.71	90.8	+5.3	102.1	79.4
Denver	1.89	+0.67	3.83	−5.10	78.1	+4.4	90.6	65.6
Detroit	2.01	−0.90	18.12	−0.85	71.8	−1.3	82.8	60.8
Kansas City	0.93	−1.90	16.07	−4.90	87.1	+6.2	95.8	75.7
Los Angeles	T	0.00	10.80	+1.19	76.7	+4.2	87.1	66.2
Minneapolis	1.33	−1.34	14.78	−0.35	74.3	+0.2	84.4	64.2
New Orleans	7.81	+0.72	27.51	−11.55	83.6	+0.5	91.1	76.1
New York	0.71	−3.53	14.46	−17.98	75.3	+0.7	83.5	67.0
Philadelphia	1.50	−2.71	18.68	−6.25	77.9	+0.7	87.0	68.7
Pittsburgh	1.57	−2.15	20.44	−3.75	74.8	−0.6	85.6	64.0
St. Louis	2.14	−0.77	13.92	−8.85	84.8	+4.2	95.1	74.5
San Francisco	0.03	+0.02	11.19	−1.77	59.1	+0.2	65.3	52.8
Seattle	1.18	+0.66	22.89	+6.28	62.3	−3.3	70.3	54.2

30-DAY WEATHER OUTLOOK

Mid-August to mid-September
by U. S. Weather Bureau



Precipitation range in 20 cities, in inches

Table shows range observed 33.3% of time. Rainfall heavier 33.3% of time, lighter 33.3% of time.
Computed by U. S. Weather Bureau (based on historical records of actual precipitation)

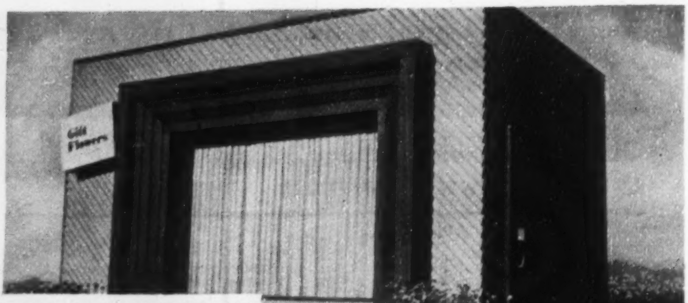
City	Aug.	Mid Aug.-Mid Sept.	Sept.	Mid Sept.-Mid Oct.	Oct.	Mid Oct.-Mid Nov.	Nov.	Mid Nov.-Mid Dec.	Dec.	Mid Dec.-Mid Jan.	Jan.	Mid Jan.-Mid Feb.	Feb.	Mid Feb.-Mid Mar.
Atlanta	2.79/5.00	2.24/4.30	1.69/3.60	1.64/3.25	1.59/2.90	2.01/3.35	2.43/3.85	2.94/4.58	3.46/5.30	3.42/5.32	3.39/5.33	3.38/5.50	3.36/5.67	3.40/6.00
Baltimore	3.20/5.66	2.65/4.51	2.10/3.36	1.88/3.57	1.66/3.77	1.61/3.44	1.56/3.12	1.99/3.43	2.41/3.73	2.59/3.85	2.77/3.96	2.57/3.68	2.36/3.39	2.48/3.76
Birmingham	2.92/5.25	2.32/4.47	1.71/3.69	1.62/3.14	1.52/2.58	1.84/3.24	2.17/3.91	2.94/4.83	3.71/5.75	3.75/5.58	3.75/5.40	3.61/5.64	3.47/5.88	4.18/6.26
Boston	2.59/4.70	2.32/4.20	2.04/3.70	2.26/3.88	2.49/4.07	2.62/4.26	2.74/4.46	2.82/4.33	2.89/4.20	2.83/4.12	2.77/4.05	2.70/3.99	2.64/3.93	2.79/4.22
Chicago	2.13/3.65	2.11/3.70	2.09/3.75	1.85/3.42	1.59/3.10	1.59/2.95	1.59/2.80	1.46/2.62	1.32/2.45	1.30/2.28	1.29/2.10	1.40/2.16	1.52/2.23	1.76/2.67
Cincinnati	2.24/4.20	2.02/3.64	1.79/3.08	1.64/2.99†	1.49/2.90	1.74/3.28	1.99/3.67	2.14/3.48	2.29/3.28	2.32/3.54	2.34/3.80	2.07/3.40	1.80/3.00	2.10/3.64
Cleveland	1.83/3.60	2.07/3.51	2.30/3.41	2.03/3.26	1.74/3.16	1.79/2.97	1.82/2.77	1.76/2.68	1.70/2.56	1.65/2.58	1.59/2.60	1.55/2.52	1.51/2.43	1.81/2.71
Dallas	1.22/2.78	1.50/2.94	1.77/3.10	1.66/3.30	1.55/3.50	1.60/3.25	1.64/3.00	1.36/3.00	1.09/3.00	1.24/3.05	1.39/3.10	1.49/2.70	1.59/2.30	1.96/3.08
Denver	0.87/1.73	0.60/1.39	0.52/1.05	0.57/1.08	0.62/1.10	0.46/0.89	0.29/0.68	0.34/0.72	0.39/0.77	0.28/0.64	0.18/0.50	0.26/0.54	0.34/0.58	0.46/0.84
Detroit	1.79/3.38	1.80/3.41	1.82/3.44	1.72/3.02	1.63/2.60	1.70/2.66	1.77/2.73	1.70/2.66	1.64/2.60	1.63/2.50	1.62/2.40	1.56/2.45	1.51/2.50	2.14/2.64
Kansas City	2.70/5.00	2.84/5.00	2.99/5.00	2.34/4.54	1.69/4.07	1.48/3.21	1.27/2.35	1.02/1.95	0.77/1.55	0.68/1.48	0.59/1.42	0.80/1.66	0.99/1.90	1.29/2.40
Los Angeles	0.00/T	0.00/0.02	T/0.03	0.08/0.32	0.15/0.60	0.20/0.95	0.26/1.30	0.70/2.00	1.14/2.70	1.19/3.00	1.24/3.30	1.12/3.25	0.99/3.20	1.06/3.08
Minneapolis	2.19/3.70	2.24/3.78	2.29/3.85	1.79/3.15	1.29/2.45	0.98/2.01	0.67/1.57	0.62/1.44	0.57/1.30	0.60/1.19	0.64/1.08	0.58/1.08	0.52/1.08	0.75/1.38
New Orleans	4.44/6.75	3.78/6.12	3.11/5.50	2.55/4.81	1.99/4.12	2.34/4.40	2.69/4.67	2.96/4.92	3.24/5.17	3.36/5.28	3.49/5.40	3.14/5.05	2.79/4.70	3.00/5.00
New York	2.72/5.20	2.46/4.30	2.21/3.40	2.15/3.76	2.09/4.13	2.15/4.04	2.21/3.95	2.42/3.86	2.64/3.77	2.55/3.71	2.46/3.65	2.41/3.88	2.36/4.10	2.35/4.08
Philadelphia	2.79/5.45	2.44/4.62	2.09/3.90	2.04/3.85	1.99/3.80	2.18/3.65	2.36/3.50	2.50/3.70	2.64/3.90	2.60/3.80	2.57/3.70	2.57/3.69	2.57/3.68	2.60/3.84
Pittsburgh	2.32/3.80	2.20/3.30	1.87/2.80	1.98/3.00	2.09/3.20	1.96/2.96	1.84/2.72	1.96/3.00	2.09/3.27	2.12/3.20	2.14/3.13	1.96/2.98	1.77/2.83	2.06/3.15
St. Louis	2.14/4.11	2.12/3.84	2.09/3.58	1.89/3.42	1.69/3.25	1.78/3.28	1.86/3.30	1.70/3.05	1.64/2.80	1.52/2.75	1.39/2.70	1.48/2.80	1.57/2.90	1.92/3.42
San Francisco	0.00	0.00/0.13	0.00/0.26	0.10/0.78	0.19/1.20	1.12/2.25	1.04/3.30	1.62/4.28	2.19/5.25	2.34/5.12	2.49/5.00	2.24/4.86	1.99/4.71	1.96/4.13
Seattle	0.18/0.90	0.62/1.55	1.07/2.20	1.70/2.85	2.32/3.50	3.07/4.55	3.82/5.60	4.00/5.74	4.17/5.89	4.14/5.57	4.12/5.25	3.34/4.92	2.55/4.60	2.18/4.02

T—Traces (Less than 0.005 inches) † Lexington

Mean temperature range in 20 cities, in degrees F.

Table shows range observed 25% of time. Mean temperature higher 37.5% of time, lower 37.5% of time.
Computed by U. S. Weather Bureau (based on historical records of actual temperature)

City	Aug.	Mid Aug.-Mid Sept.	Sept.	Mid Sept.-Mid Oct.	Oct.	Mid Oct.-Mid Nov.	Nov.	Mid Nov.-Mid Dec.	Dec.	Mid Dec.-Mid Jan.	Jan.	Mid Jan.-Mid Feb.	Feb.	Mid Feb.-Mid Mar.
Atlanta	78.0/79.1	76.3/78.1	72.9/75.4	68.2/70.2	62.3/63.8	56.6/58.2	51.1/52.7	46.6/48.4	44.0/46.0	48.3/50.3	43.5/45.5	44.0/46.4	45.1/47.9	47.5/50.1
Baltimore	73.6/75.7	71.1/73.3	67.1/69.4	62.2/64.4	56.4/58.3	50.9/52.6	45.6/47.0	40.2/42.0	35.8/37.8	34.2/36.1	32.9/35.7	32.4/36.0	34.6/38.0	38.1/41.7
Birmingham	78.5/79.8	76.6/78.5	73.3/75.6	68.5/70.7	62.2/64.2	56.2/58.5	50.7/53.2	46.5/48.9	44.3/46.5	43.4/46.1	43.5/46.5	44.4/47.6	46.0/49.4	48.8/51.7
Boston	70.9/72.1	67.6/69.2	63.3/65.4	58.9/61.0	54.2/56.2	49.3/51.3	43.6/45.6	36.8/39.2	31.2/34.0	28.9/31.9	27.9/31.2	26.4/29.6	27.8/30.0	31.4/34.0
Chicago	72.0/73.7	68.8/70.7	64.5/66.7	59.3/61.7	52.8/55.3	45.9/48.6	38.6/41.5	31.2/35.0	25.7/30.3	23.7/28.5	23.2/28.1	23.1/28.1	24.7/30.0	29.2/34.2
Cincinnati	72.5/74.4	70.2/72.1	66.5/68.4	61.2/63.3	54.9/57.1	48.6/50.9	42.0/44.5	35.9/39.1	31.4/35.2	30.1/34.4	29.8/34.6	29.9/34.4	31.6/36.0	35.2/39.2
Cleveland	70.9/72.7	68.5/70.6	64.7/67.1	59.5/61.8	53.5/55.6	47.1/49.3	40.5/42.7	34.3/37.2	29.3/32.9	27.3/30.9	26.9/30.5	26.0/29.6	26.2/29.7	29.8/33.7
Dallas	85.1/86.7	82.3/83.9	78.1/79.7	73.8/75.1	68.5/69.4	61.4/63.1	54.3/56.7	49.9/52.3	47.0/49.3	44.8/47.1	44.1/47.5	45.8/49.2	48.8/52.2	51.9/55.6
Denver	70.8/72.2	67.3/68.6	62.2/63.4	56.7/58.3	50.8/52.8	44.5/47.2	38.0/41.4	33.5/36.7	30.5/33.5	28.3/31.4	27.0/30.0	27.9/31.5	30.5/34.7	33.1/36.8
Detroit	70.5/72.0	67.5/69.5	63.0/65.6	57.8/60.2	51.9/54.1	45.8/47.9	39.2/41.1	32.9/35.3	27.9/30.9	25.6/28.5	23.8/27.7	24.2/27.8	24.6/28.9	27.9/32.1
Kansas City	78.4/80.1	74.6/76.6	69.7/71.9	64.4/67.0	58.1/61.2	50.7/53.9	42.6/45.9	36.7/40.1	32.4/35.9	30.4/33.0	30.0/31.9	30.2/33.6	32.2/37.1	37.3/41.2
Los Angeles	67.4/68.6	66.8/68.1	65.9/67.3	64.4/65.9	62.7/64.2	60.5/62.1	57.9/59.8	56.5/58.2	54.9/56.5	53.4/54.8	52.7/54.0	52.6/54.3	52.9/55.1	54.1/56.3
Minneapolis	70.8/72.3	66.3/68.4	61.0/63.6	55.5/58.3	48.8/51.7	40.6/40.3	30.9/36.0	22.5/28.1	16.2/22.3	13.8/18.4	13.4/16.5	13.3/17.7	15.0/20.8	21.7/25.9
New Orleans	81.8/82.7	80.8/81.9	78.5/79.7	75.1/76.5	70.5/71.9	64.6/66.8	59.0/61.9	56.0/58.5	54.6/56.8	53.2/56.0	52.6/56.0	54.0/61.4	55.9/59.3	57.6/60.8
New York	73.6/74.9	71.0/72.5	67.4/69.0	62.7/64.3	57.0/58.6	51.8/53.2	46.5/47.9	40.2/42.3	34.6/37.5	32.5/35.2	32.0/34.6	30.9/33.6	30.9/33.6	34.1/36.8
Philadelphia	73.3/74.5	70.6/72.1	66.8/68.5	61.6/63.5	55.6/57.6	50.3/52.3	45.3/47.2	39.9/42.0	35.1/37.3	32.7/35.4	31.8/35.0	31.1/34.3	32.3/35.3	36.4/39.2
Pittsburgh	69.3/70.9	67.2/68.9	64.0/65.9	58.8/60.9	52.0/54.4	46.2/48.2	40.3/42.0	34.0/36.4	29.5/32.6	27.8/31.0	26.9/30.1	26.4/30.5	26.9/32.0	30.5/35.4
St. Louis	76.7/78.5	73.6/75.6	69.1/71.2	64.0/6.63	58.1/60.5	51.0/53.9	43.6/46.9	37.6/41.2	33.3/37.1	30.9/35.1	30.1/34.7	31.3/35.7	33.7/38.1	37.8/41.8
San Francisco	60.1/61.2	60.9/62.2	61.3/62.8	60.4/62.0	58.5/60.2	57.9/59.9	53.8/55.0	50.9/52.3	48.7/50.2	47.1/48.9	46.9/49.1	47.3/50.8	50.0/51.7	51.0/52.8
Seattle	62.7/64.1	60.8/62.0	58.0/59.0	54.8/56.1	51.0/52.5	41.8/43.3	43.1/44.5	41.0/42.4	39.4/40.7	37.7/39.0	37.2/38.5	38.2/40.0	39.7/42.0	41.7/43.3



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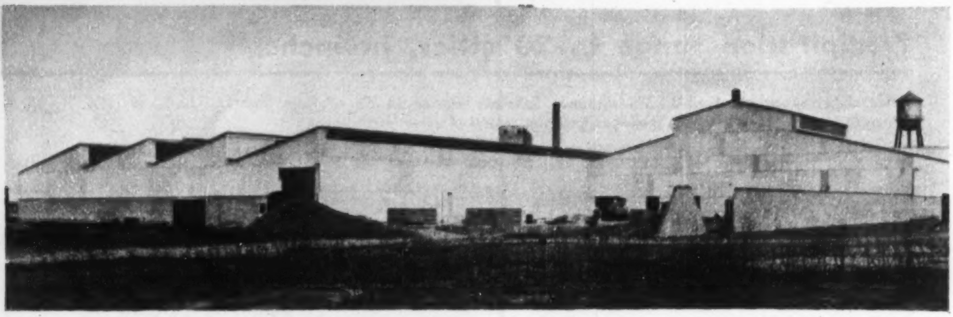

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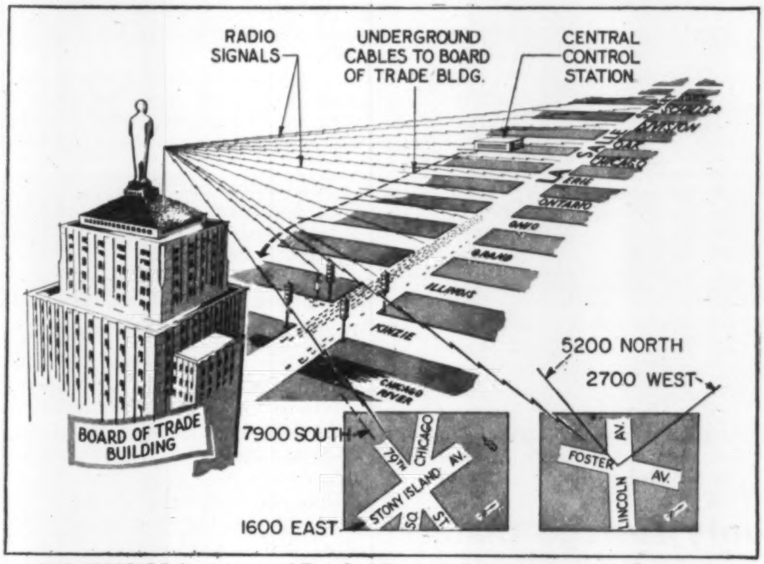

RADIO SIGNALS from tower of Board of Trade Building in Chicago's Loop will move traffic at 13 intersections. It's a $40,000 pilot plan for . . .

Controlling traffic lights by radio

By next January Chicago will have what may become the answer to handling large volumes of traffic in congested areas.

Revolutionary in concept, and believed to be the first of its kind, it is the synchronization, control and operation of a series of signalized intersections by FM radio signals. Its objectives are three-fold: economy of installation, improved efficiency and safety in handling traffic, and a green light for the majority of motorists when they want it.

For the past two years this so-called pilot study of controlling traffic by radio has been in the formative stage. Details were developed by Ralph F. Michel, associate traffic engineer under Chicago's city traffic engineer Leslie J. Sorensen, and Lloyd M. Johnson, commissioner of electricity and sanitation. Announcement of the plan was made by Mayor Kennelly following the granting of a permit by the Federal Communications Commission for Chicago to operate the system by FM radio.

• What it is—The pilot study will include radio control and operation of 11 signalized intersections on heavily-traveled La Salle St., beginning at Kinzie just north of the Chicago River and extending north to North Ave. In addition, two of Chicago's busiest intersections in outlying areas —79th and Stony Island Ave. on the southside and Lincoln and Foster Aves. on the north side—will be radio controlled as part of the study. Both of these intersections are about 8 mi from the Board of Trade Building, located at Jackson and La Salle.

Nerve center of the 13-intersection system will be in a central control station located in the Bureau of Electricity's shops at 405 West Chicago Ave. Control signals from this station will be sent by existing underground fire alarm cables to the transmitter, and then to the antenna atop the Board of Trade Building, about 545 ft above Chicago's datum. From there they will be transmitted to the various intersections.

At each of the 13 intersections there will be a small antenna and receiver for the radio signals, a decoder, and a controller with appropriate housing to vary the cycles of the traffic lights at that intersection.

• How it works—All eleven signalized intersections on La Salle St. will be synchronized to handle 30-mph inbound traffic during the morning rush hours and the same speed outbound traffic during the afternoon rush hours. Maximum efficiency of traffic flow during these periods will require a complete cycle (red, amber and green) of 48-sec duration. To synchronize these 11 intersections on La Salle St., it will require different "time-offset" periods for each group of lights at the various intersections. ("Time-offset" is the total elapsed time from the beginning of green at one intersection to the beginning of green at the next one.) These "time-offsets" are based on the time it takes a car at 30 mph to travel the distance between intersections. And the reason they must vary is that the intersections are not equally spaced.

Outside of rush-hour periods on La Salle St. the signals will be operated on cycles which give equal consideration to inbound and outbound traffic, with appropriate consideration for cross-traffic. This is the manner in which they operate at present, by electric control, in a non-interconnected system.

About 95% of the time, radio control of all 13 intersections will be strictly automatic, during both rush hours and off-peak periods. This will require practically no supervision in the control center. Manual operation may be required as much as 5% of the time. "Manual operation" means varying the signal cycles or time-offsets by pushing the corresponding control buttons in the central control station —not manipulating the lights from a control box at any particular intersection.

Most of the manual operation will be during foul weather, such as snow, sleet or fog, when traffic can't travel safely at 30 mph., or in the event of an unusual traffic congestion at one or more intersections. Although all radio signals, or impulses, will be flashed city-wide, the control mechanism at each intersection will pick up and decode only those signals that are intended for it.

• Out-lying intersections—Decision to include the intersections at 79th and Stony Island Ave., and at Lincoln and Foster Aves. in the pilot plan was based chiefly on the fact that they are at considerable distance from the Board of Trade building. This gives an opportunity to see how the system works for that distance.

Then, too, both intersections have heavy traffic. An average of 75,000 vehicles pass through 79th and Stony Island Ave. and 45,000 through the Foster and Lincoln intersection, during a normal 24-hr period.

Altogether, the pilot plan will control the movement of 780,000 vehicle

(Continued on page 44)

movements at intersections in a normal 24-hr period. About 50,000 vehicles per day normally use La Salle St., and each of the 11 radio-controlled intersections will average 10,000 cross-traffic vehicles. This adds up to 660,000 vehicle-intersection operations per day on La Salle St., plus 120,000 such movements at the two outlying intersections.

• **Why called a pilot plan**—Although this large-scale plan to control traffic at 13 busy intersections will be a sizeable operation, its developers call it a "pilot plan." In reality, this is true. For if it is as practical and as efficient as expected, it probably will be expanded extensively.

At present, the city's Department of Electricity has 1,200 signalized intersections under its jurisdiction. Long-range plans envision the signalization of a total of 3,000 intersections. Of this number, about 450 would lend themselves to radio control—possibly within the next five years.

It is estimated that a city-wide conventional interconnected cable system for these 450 intersections would cost about $7,500 per intersection. This would add up to $3,375,000. No detailed estimates of the cost of radio control for this system of intersections are available. But the best guess is that it would be on the order of one-seventh of the cost of a conventional cable system—or about $480,000. The city now has a centrally-controlled cable-connected electrical system for operating about 80 signalized interchanges in the Loop area.

Like other cities, both large and small, Chicago has found increasing need for more and more traffic signals as traffic volume has spiraled since its first stop-and-go traffic control unit was installed in 1926.

Operation of city-county sewage plant will help to clean up Delaware River

The $16-million Wilmington-New Castle County joint sewage disposal system will be completed in October when the Cherry Island Marsh treatment plant, now under construction, is scheduled to be ready for operation.

When the $3-million plant starts operating, Delaware's most thickly populated area will cease discharging raw sewage into the Delaware River.

Three years in the building—and many more in the planning—the city-county system is the fulfillment of one of the principal aims of the Interstate Commission for the Delaware River Basin (Incodel) and Delaware Legislature that five years ago created the Delaware State Water Pollution Commission.

Incodel, established in 1935 with representatives of New York, New Jersey, Pennsylvania and Delaware, has sought to set up a program of industrial waste disposal, conservation and reforestation, but the agency placed improved municipal sewage disposal first on its list.

Wilmington's share of the cost—financed by serial bonds maturing over a long-term period—is slightly under $12 million. New Castle County's cost is currently estimated at about $4 million, but may be adjusted upward as new mains and extensions are required to tie in with mushrooming suburban developments.

The water pollution commission, seeking clean streams since its inception in 1949, began with the cleanup of such rivers as the Broadkill and Mispillion in Sussex County, Del., and has extended its operations to the Brandywine and Christina Rivers and Red Clay Creek in the Wilmington area.

The city-county system is "second only to the cleanup of Philadelphia and the Schuylkill River as far as the Delaware River Basin is concerned," according to Clayton M. Hoff, executive secretary of the Brandywine Valley Assn.

Under the system, county interceptors are hooked in at six locations on the city's boundaries. All sewage goes to the city pumping station from which it flows after coarse screening to the Delaware River.

When the treatment plant has been placed in operation, sewage will be delivered through it to the river by an 84-in. force main.

The city's portion of the construction program is substantially complete, but two county lines remain under construction. They are the Holly Oak to Stockdale section north of the city, and Farnhurst to New Castle County Airport from the city limits south.

Plan Georgia port expansion

Expansion of the Port of Savannah, Ga., is planned now that several hundred acres of industrial land have been made available, according to The American Waterways Operators, Inc.

Development of docking facilities on the Savannah River and the Atlantic Intracoastal Waterways as well as industrial development of the area is assured, according to AWO spokesmen.

Completion of a $14.6-million high-level bridge will make hundreds of acres on Hutchinson Island available for industrial use and port improvement.

Still another tract of more than 400 acres has been offered for industrial development by the Savannah and Atlantic Railway.

Absentee bond votes counted—turn-about victory is result

The city of San Francisco, which polled voters for sewerage improvements in an election June 8 (ENR May 6, p. 49) planned extensive disposal and collection projects if voters approved.

Two days after the election, word went out that the program had been rejected, but some doubt as to the official outcome was voiced because mail-in ballots had not been received.

According to results at that time, the vote was 99,539 in favor and 50,298 against—less than the two-thirds necessary for passage. Some 5,000 absentee ballots, however, remained to be tallied.

The apparent defeat on the $12.6-million sewer bond issue surprisingly has turned to victory with a final count of 109,314 in favor and 54,564 against, thus carrying the issuance over the line by a slim 186 votes.

The bond issue, which will raise the city tax rate an average of eight cents for the next 15 years will permit completion of outfall sewers and will end dumping of raw sewage into the bay.

Acquisition of 345 acres launches development plan

Acquisition of a 345-acre tract in the Torresdale section of Philadelphia, Pa., is the initial step in the planning of a $35-million housing and shopping center development project, it has been announced.

Harry A. Doyle, who, for an investment syndicate, took title to the tract, stated that 3,000 homes of various types will be built on the site at an estimated cost of $30 million.

About 300 of the structures, says Doyle, will be single-family, detached dwellings ranging in price from $25,000 to $50,000.

Approximately 200 semi-detached homes for accommodation of middle-income groups are planned, and the remaining 2,500 will be the varied row-type structures with residential units priced from $10,000 to $12,000.

Portions of the tract will be set aside for schools and churches, and several playgrounds and parks will be provided. Also planned is a shopping center that will occupy a centrally located 25 acres.

Municipal briefs . . .

- **Big plan to voters**—Cincinnati, O., city council's finance committee has registered 2 to 1 approval for presenting $37 million in bond issues to the voters in November. More than $11 million in public improvement bond issues is slated to go on the ballots with $11 million for county expenditure and $15 million for the board of education.

- **Plenty of work in Sacramento, Calif.**—The state water pollution control board staff in Sacramento reports that community sewerage projects costing more than $24 million are now under construction and over $62 million is proposed to be spent on similar work during the next few years.

- **Sewerage for Pittsburgh area**—Pittsburgh and 63 neighboring communities are planning a sewage disposal system and plant to cost $70 million. The project, slated for 1958 completion, and designed to help clean up the Ohio River, includes 63 miles of sewers, several pumping stations and a treatment plant with a daily capacity of 150 mgd.

- **Federal funds for Indiana airports**—The CAA has recommended to Congress that allocations ranging from $50,000 to $1 million be made for improvement of five airports in Indiana. The largest, to be spent on Weir Cook Municipal Airport in Indianapolis, would be used to purchase a 300-acre tract to supplement the existing 1,100 acres at the port and repair and strengthen runways, enlarge apron and taxiways and for other improvements. The other cities benefitted would be Terre Haute, Richmond, Evansville and South Bend.

- **Just try out the family bus**—When the new $3.9-million Toledo, O., Municipal Airport is formally opened this fall, area motorists will get a chance to fulfill that secret desire to run their cars down the runway. The runways will be opened to motorists so that they can get an idea of the airport's size. Police will be there to discourage the "Barney Oldfields."

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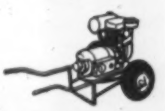

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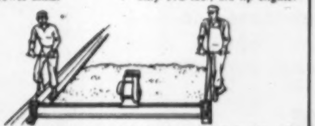

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INTERNATIONAL

$25-million sewage plan in New Zealand substituted for more expensive scheme

A $25-million sewage works program including large-scale oxidation ponds was adopted at an early July session of the Auckland, New Zealand, Metropolitan Drainage Board. The new Manukau scheme was recommended by a survey panel including three California sanitary engineers after an intense three months' study. It replaces the Brown's Island scheme that contemplated activated sludge treatment and which was officially abandoned by the board in May. The Brown's Island scheme had been under contract for almost a year with about $1 million spent. Even so, the new Manukau plan is estimated to cost only 70% as much as the Brown's Island scheme. Annual costs of Manukau scheme are estimated at 60% that of the Brown's Island plan.

The reversal represents a personal victory for D. M. Robinson, chairman of the Auckland Metropolitan Drainage Board. Robinson, an Auckland businessman, swept into office early this year at the head of a group that had fought the Brown's Island scheme. The sewage works switch has been a most publicized and controversial sanitary engineering matter.

Soon after the new Drainage Board took office, a survey panel was retained to study the Auckland program. Included were David H. Caldwell of Brown and Caldwell, chemical and civil engineers, San Francisco; Charles Gilman Hyde, professor of sanitary engineering (emeritus), University of California, and consulting engineer, Berkeley, Calif.; A M Rawn, chief engineer and general manager, Los Angeles County Sanitation Districts; H. Wilson, biochemist, London; and J. T. Calvert, civil engineer, London.

First official report of the survey panel was a negative report on the Brown's Island scheme. This plan included an activated sludge plant on an island in Waitemata Harbor to be connected to interceptors by more than a mile of subaqueous line. But the main reason for rejecting the scheme was that it would not produce effluent results required by the New Zealand Health Department — not more than 100 B. Coli per ml on bathing beaches. One reason for this is that disinfection is impractical due to high cost of chlorine and unreliability of chlorine supply in Auckland.

• **Largest oxidation pond**—The survey panel then developed an alternate plan that called for extensive interceptors leading to a treatment plant discharging to Manukau Harbor. The plant will include the largest oxidation pond installation ever constructed. Size of the ponds was the main point of opposition to the Manukau scheme. The four ponds will have a total effective area of 1,100 acres. The panel noted, however, that there are no insurmountable technical problems in building and operating larger ponds.

Other elements of the proposed treatment works include bar racks, Venturi flume, preaeration and grit removal tanks, sedimentation tanks, sludge digestion tanks, sludge lagoon, auxiliary trickling filters, and outfall. Discharge would be to a tidal channel at ebb tide only. Part of the plant flow would be circulated from the sedimentation tanks to the trickling filters. Purpose is to reduce a portion of the high BOD. Trickling filter flow would be recirculated to the sedimentation tanks. Some 80% of sludge digestion will be accomplished in digestion tanks with final digestion in a lagoon formed by a natural volcanic cone. Digested sludge would accumulate in the lagoon, there being storage capacity for more than 50 years.

The plant would have capacity in the year 2000 for 55.3 mgd (Imperial gallons) average flow. Load would include an estimated 228,000 lb per day BOD and 236,000 lb per day suspended solids. Population in the year 2000 is estimated at 777,000 with 1951 Auckland population being 127,400 and in the 200-sq mi Drainage Board area 296,200.

Also in the program will be many miles of interceptors including concrete pipe from 48 to 108 in. dia. The terrain will require 39 pumping plants —0.5- to 60-mgd capacity.

One member of the panel, J. T. Calvert, submitted a minority report supporting the Brown's Island scheme. Basis of the support was hoped-for relaxation of rigid effluent requirements. Calvert also objected to the proposed Manukau scheme on the basis of time.

The Drainage Board has instructed its Acting Chief Engineer C. C. Collom to proceed with designs of the new work. It is hoped to have the program operative by 1959.

Auckland is located on a narrow neck of New Zealand's North Island. It is probably the only port in the world with harbors on two major bodies of water. Waitemata Harbor to the north fronts on the South Pacific Ocean. The shallower Manukau Harbor to the south and southwest faces the Tasman Sea. At 37 deg south latitude, Auckland has a mean annual temperature of 59.4 F and an average annual rainfall of 51 in. per year. The climatic conditions are considered highly favorable to oxidation pond operation.

Primary industry is meat and animal products processing. This accounts for the high BOD load. All industrial wastes and domestic sewage now discharge direct to the two harbors. Purpose of the new program is to remove health hazards resulting from the harbor pollution.

Seaway project speeds up Ontario highway planning

The Ontario Highways Department has unveiled plans for construction of new roads. These roads will be designed to handle the increase in traffic that is expected to result from completion of the St. Lawrence Seaway.

Major projects include two links in the $300-million Trans-Provincial Expressway that will eventually run 542 mi between Windsor and the Quebec border. When work starts this summer on these new sections it will mean that about 300 mi of the four-lane controlled access highway is under construction or already completed.

One of the new expressway sections will run from Toronto to Galt and Kitchener, a distance of 60 mi. The other—an 80-mi stretch costing $30 million—will follow a route about 2 mi north of the St. Lawrence shoreline to connect Brockville with the Quebec border. The latter project will be rushed through the initial planning stage and carry an "urgent" classification during construction.

Contracts were recently awarded on smaller Trans-Provincial Expressway sections including two bridges over Cedar Creek between Lambeth and Woodstock, and an underpass interchange south of London.

Ontario also plans to spend $7 million to relocate 35 mi of Highway No. 2 near Cornwall so that the present road can be used as a service route during the period of construction on the Seaway.

The new highway will run about ½ mi north of the shoreline and merge with the Expressway at Lancaster, 10 mi from the Quebec border.

In addition, the province has proposed construction of a scenic highway at the Long Sault connecting the islands in the St. Lawrence with the Ontario shore. A series of parks—patterned after the system at Niagara Falls—would be established along the route.

1,100-ft single-span bridge suggested for west England

A 1,100-ft single-span arch bridge—the longest structure of its type in Britain—has been proposed to link Widnes and Runcorn. It would rise 80 ft above the Mersey River and Manchester Ship Canal with girder work reaching to 200 ft above the canal.

Preliminary drawings already have been prepared. If the British Ministry of Transport agrees to the plans, work may get under way early next year.

A suspension bridge originally was planned for the site, which is a few miles south of Liverpool. But wind-tunnel tests showed that a nearby railway bridge would subject the new structure to unexpected eddies and wind currents. With a 30-ft roadway, the single-span bridge would be 6 ft wider than the suspension bridge. It would cost $700,000 more than the $4.1 million estimated for the suspension bridge. Completion would be in about 3½ years.

2,200-mi pipeline project gets green light in Canada

Canada has given Trans-Canada Pipe Lines, Ltd., permission to go ahead with preparations for a spring start on construction of the world's largest natural gas pipeline—a 2,200-mi one running from Alberta to industrial areas around Montreal and Toronto.

A conditional permit to build the $300-million line has been issued by the Canadian Board of Transport Commissioners. It specifies that by the end of December the company must show that it has arranged for financing and that it will have federal authority to export gas into the U. S.

Federal permission for the export is required because part of the undertaking will involve construction of a branch line near Winnipeg to send 150,000,000 cu ft of gas a day to Minneapolis and its vicinity. Plans call for this delivery to start by the end of 1955.

(*International cont'd on page* 48)

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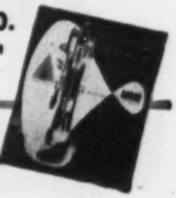

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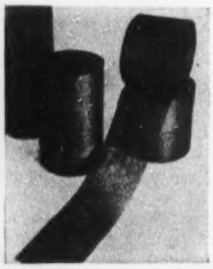

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INTERNATIONAL

International briefs . . .

- **Congo costs rise**—Cost of the Belgian Congo's 10-year development plan has almost doubled since work started in 1948—from \$492.5 million to \$945.6 million. Under a new estimate, electricity and transportation will take \$472.8 million; housing, education, health, water supplies, \$242.3 million; public services and highways, \$173.3 million; agricultural development and scientific research, \$51.2 million.

- **African survey due**—Technical surveys of the \$401.7-million scheme to harness the Gold Coast's Volta River for hydroelectric power and aluminum production should be complete by the end of this year. The African project reportedly is the world's greatest potential aluminum producer. It is expected that full reports on the development scheme will be made to interested governments and companies sometime during 1955.

- **Teamwork talk**—British banking and industrial firms reportedly want to take part in Egypt's \$1.4 billion national projects, including construction of a \$558-million Nile dam at Aswan. Meanwhile, the British Chamber of Commerce in Egypt suggests an Egyptian trade fair in London and a British trade fair in Cairo to mark the expected resumption of Anglo-Egyptian trade.

- **77-year old proposal**—What is reported to be the first traffic tunnel through a Canadian building will be constructed in Montreal's business district. It's part of a ½-mi street improvement project to provide a new traffic artery parallel to the city's main east-west route. The \$5.5-million improvement—first proposed in 1877—has been held up for the past 27 years by an apartment block built across the route. Tunneling through the first two stories of the building will make a 28-ft roadway to carry eastbound traffic.

- **Moving a mountain**—Mexico is converting Guaymas Harbor (on the Gulf of California) into a major port by leveling a large island in the harbor and using the excess earth to fill in a new port area. The \$14.5-million job consists of driving iron piling around a rectangular offshore area that includes the leveled island. When the perimeter has been filled with earth from the mountain in its center, the entire rectangle will be concrete covered.

MEN AND JOBS

Florida engineer named as architect of Capitol

J. George Stewart of Hollywood, Fla., a civil engineer, has been appointed architect of the Capitol by President Eisenhower.

He will take over the position—largely an administrative one—from David Lynn, who is retiring Sept. 30 after more than 30 years' service.

Stewart, while a resident of Delaware, served a term in the House of Representatives (1935-1937). He also was clerk of the District Committee of the Senate from 1947 to 1951.

An additional Senate office building, estimated to cost $20.6 million and for which Congress has made an initial appropriation of $6 million, will be the first big construction job to be supervised by Stewart. Plans for the job have been completed by Eggers & Higgins of New York and are now being revised by that firm.

The office of Capitol Architect has been continuous since 1851 and has been held by seven appointees. Prior to this date appointments were made as required by the Capitol's construction needs. The post has been held both by architects and civil engineers.

Advance two at S & W

Two of the top engineering staff of Stone & Webster Engineering Corp. have been advanced to new posts, company announcements said last week.

Myrton H. Cutler succeeds Ernest A. Dockstader as chief structural engineer; Edward E. Bigelow is named assistant engineering manager. Cutler has been on the company's staff since 1923, specializing in design and construction of public utility power stations; Bigelow who also joined the company in 1923, has been structural engineer on many projects throughout the United States.

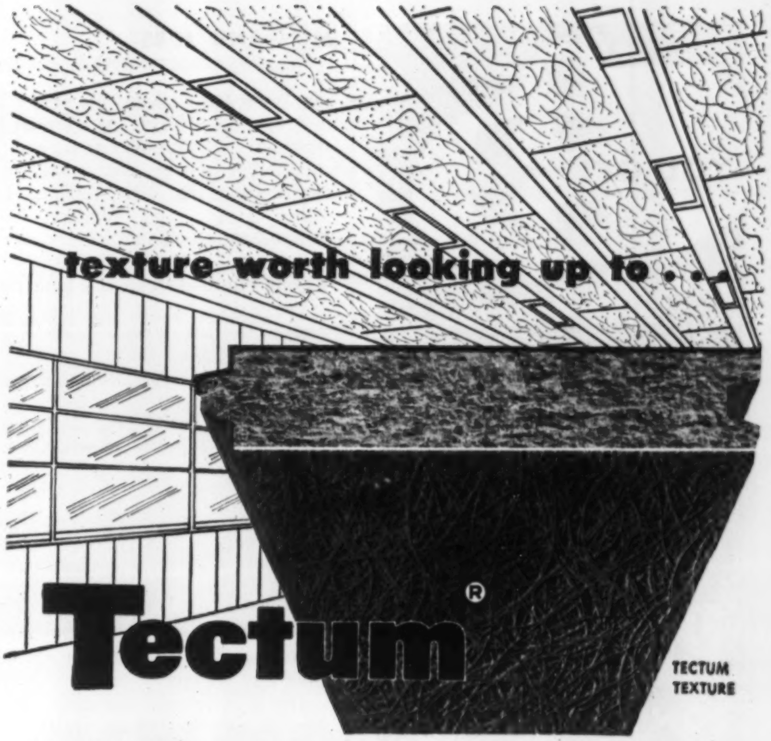
Dockstader has been named consulting engineer.

Newark, N. J., city engineer named city administrator

City Engineer John S. Flockhart, whose municipal career covers more than 33 years, has been appointed to the new post of City Administrator for Newark, New Jersey's largest city.

As city administrator, 56-year-old Flockhart holds a position second only to that of the mayor in administrative importance, under a new city charter

(*Continued on page 50*)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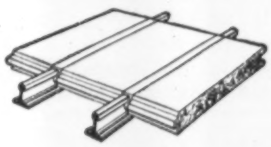

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that went into effect this year. The new appointee heads up his own Department of Administration, and has supervisory power over seven other city departments: Law, Finance, Fire, Police, Health and Welfare, Public Works, and Revenue.

• **Long climb**—Flockhart's long career in city service has covered nearly every rung of the engineering ladder.

He first joined the city in 1921 as an engineer draftsman, taking a civil engineering degree (via night courses) at Brooklyn Polytechnic Institute in 1931, and studying municipal engineering at Newark College of Engineering.

Meanwhile, he served successively as junior engineer, assistant engineer, principal engineer and engineer in charge of the Public Works Department. In 1951, while head of the Bureau of Sanitation, he was chosen to replace the late Dudley Coles as chief city engineer.

He is a former president of the American Public Works Assoc. and an officer or member of numerous other technical and professional societies.

Men and Jobs briefs . . .

• **Careers** – **H. B. Wildschut,** Wauwatosa, Wis., city engineer since 1946, has been appointed Milwaukee County's first expressway engineer to handle all expressway planning and construction for the area . . . **H. M. Leppich** is new director of engineering and construction for AEC's Idaho Falls installation, succeeding **Allen C. Johnson**, now manager of the Idaho operations office . . .

M. R. Royer, formerly with the Kansas State Highway Commission, is new district engineer for the Asphalt Institute, headquartering at Kansas City, Mo. . . . Virginia's highway department has named **W. C. LaBaugh Jr.**, resident engineer at Bowling Green, as director of in-service training . . . **E. R. Lee Jr.** is now power engineer for Kaiser Engineers . . . Dropping his job as city manager of Monte Vista, Colo., **Arthur Riley** is now city engineer at Durango.

• **Army Engineers**—**Lincoln F. Sherman,** a 22-year veteran of government construction work, is new project engineer for Table Rock Dam . . . **J. M. Polatty** is chief of the concrete branch, Jackson sub-office, Waterways Experiment Station . . .

Col. C. D. McDaniel is new executive officer for the North Pacific Division . . . **Col. S. E. Smith** becomes district engineer at Baltimore . . . **Col. Willard P. McCrone** posted as district engineer at Galveston . . . **Col. A. H. Miller,** former executive officer of Walla Walla district, to district engineer . . . **Col. W. F. Cassidy** becomes assistant division engineer, South Pacific Division . . . **Albert M. Capps,** chief of operations at Bonneville Dam, becomes project engineer, succeeding **F. M. Lewis** who has become coordinator of operations and maintenance for the Pacific Northwest.

• **Retirements** – **Horatio G. Stoner,** chief of the survey and drafting branch, Portland district, Corps of Engineers, after 28 years' service . . . **William W. Brewer,** resident partner at San Francisco for Dames & Moore.

• **Honors**—**Walter J. Seeley,** dean of Duke University's school of engineering, named chairman of the North Carolina State Board of Registration for Engineers and Land Surveyors . . . **Gunnar Sigurdsson,** who graduated in June from Georgia Tech with highest honors in civil engineering, receives the ASCE's J. Waldo Smith hydraulic fellowship.

• **Business** – New vice-president and manager of the Chicago office for U. S. Fire Protection Engineering Service, Inc. is **John T. W. Babcock,** formerly assistant chief engineer, Factory Insurance Association . . . **H. Douglass Moulton** elected president of United States Steel Homes. . . .

Ray L. Hamilton, veteran Bechtel Corp. pipeline engineer, now a vice-president of the corporation . . . **H. K. Cook** and **T. M. Kelly,** both formerly of the Corps of Engineers research staffs, have joined the laboratory staff of Master Builders . . .

William V. Lawson, in charge of western operations for the George A. Fuller Co., becomes a vice-president and director . . . **George L. Curtis,** becomes vice-president, engineering, for United Concrete Pipe Corp. . . . **George F. Schatz** has formed a firm under his own name at Cincinnati, after resigning from Schatz, Elliston, Hall, McAllister and Stockwell . . .

A. Clingenberg will head three major phases of Baltimore Contractors, Inc., operations: Homebuilding, development and wrecking . . . **William T. Ingram,** of the sanitary engineering staff of New York University, has established a consulting practice at Whitestone, New York . . . **Thurston Klayton,** director of engineering research and development for Luria Engineering Co., has taken on additional duties as chief engineer.

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OBITUARIES

Roger O. Comer, 69, marine and harbor engineer who retired last year after 28 years service with Solvay Process Division of Allied Chemical & Dye Corp., died July 28 in Syracuse, N. Y. Early in his career—from 1910 to 1917—he was chief engineer of the harbor and marine division of the Panama Canal Commission. Later he was assistant principal engineer of the Board of Port Engineers for New Orleans and assistant chief engineer for General Chemical Co. of New York City.

Samuel E. Stewart, 66, Upper Darby, Pa., assistant chief engineer for the Philadelphia Suburban Transportation Co., died July 25. A civil engineering graduate of Ohio Northern University, he worked for the Pennsylvania Railroad until 1934, later was superintendent of the Philadelphia and Western Street Railway Co.

Edward P. Palmer, 69, partner in Senior & Palmer, New York City, and former president of Associated General Contractors of America, died July 12 in Stamford, Conn. A 1906 graduate of Swarthmore College, he helped build the early subways in New York and the anchorage for the George Washington Bridge. He received the 1953 Miles Award for outstanding construction achievement.

John Marsch, 85, of Marsch Construction Co., Chicago, died July 29. He entered the contracting business in 1890.

Tracy leMay, 70, Toronto city planning commissioner, died July 28. Born in England, he went to Canada in 1906 and joined the land surveying firm of Speight & Van Nostrand. In 1910 he became the official surveyor for Toronto and in 1930 was appointed commissioner.

Harry Garaux, 78, Canton, O., one of the founders of the Garaux Bros. Construction Co. and president of United Sand & Gravel Co., died July 27.

James J. Coyne, 72, a member of the Pennsylvania Turnpike Commission since 1943, died July 26 in Pittsburgh.

Frank H. Stuart, 85, president of T. Stuart & Son Co., Watertown, Mass., died at Chestnut Hill, Mass., July 28. He founded the contracting firm in 1901 and was identified with bridge and naval ammunition depot projects in the Northeast.

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BOOKS

Estimator's guide gets a new co-editor

THE BUILDING ESTIMATOR'S REFERFNCE BOOK—Twelfth Edition. By Frank R. Walker, 1,774 pp. Published by Frank R. Walker Co., 173 West Madison St., Chicago 2, Ill. $12.00, including the Vest Pocket Estimator.

In 1950, when Frank Walker wrote the preface to the 12th edition of his well known estimator's handbook, he said: "This is my Swan Song—unless a well equipped younger man can be found to carry on what I have attempted to do during these past 35 years."

In the intervening years the "well equipped younger man" was found. He is Emil F. Zirwas, 42, with 20 years of field and office experience as an estimator and construction engineer.

Because of the new editor's modesty, the new edition appears under Mr. Walker's name alone. But Mr. Zirwas did the great bulk of the work of bringing its contents down to date, which fact Mr. Walker states in the preface. This work included the addition of cost data on new mechanical equipment and methods, which are of increasing importance to the building construction industry.

Miscellaneous notes

• **Need for coordinated building research** is pointed out in a 24-page booket, "Technological Research and Construction Markets," published by the Construction and Civic Development Department, Chamber of Commerce of the United States, Washington 6, D. C. Calling attention to the building industry's capabilities for production and technical progress, the national chamber proposes that research in all the various sectors of the building industry should be brought together into a building science, which will expand markets for the industry's services and products. The way to make this forward step, the chamber says, is through membership in the Building Research Institute, an affiliate of the Building Research Advisory Board of the National Academy of Sciences, and therefore, the construction industry is urged to join and support BRI.

• **New advisory** "Standards for the Construction and Protection of Piers and Wharves" have been published by the National Fire Protection Association. These new standards focus attention on the danger of fire underneath the main deck of piers and wharves with combustible substructures—spaces very difficult of access by fire departments and which, where not subdivided by fire-resistive bulkheads and provided with automatic protection, have been the cause of a long series of disastrous fires. The new standards recommend completely noncombustible construction and specify that where wood substructures are used the area should be subdivided suitably to prevent the spread of fire. Where areas are greater than a specified minimum, automatic sprinkler protection should be provided. Superstructures, methods of protection for combustible cargoes, water supplies for fire fighting and other details are covered. Copies may be obtained for 35¢ each from the association, 60 Batterymarch St., Boston 10, Mass.

New engineering books

THE YOUNG ENGINEER: Simplified Science and Engineering—By Charles B. Broschart, 243 pp. Exposition Press, 386 Fourth Ave., New York 16, N. Y. $3.00.

THE YOUNG SCIENTIST: Activities for Junior High School Students—By Maitland P. Simmons, B.Sc., M.A. 164 pp. Exposition Press, 386 Fourth Ave., New York 16, N. Y. $3.00.

DESCRIPTIVE GEOMETRY WORKSHEETS: Series B—By E. G. Paré, R. O. Loving, I. L. Hill. The Macmillan Co., 60 Fifth Ave., New York 11, N. Y. $3.25.

DWELLING HOUSE CONSTRUCTION—Second Edition. By Albert G. H. Dietz. D. Van Nostrand Co., 250 4th Ave., New York 3, New York. $7.50.

HOW TO OPERATE EXCAVATION EQUIPMENT—By Herbert L. Nichols, Jr. 150 pp. North Castle Books, 212 Bedford Road, Greenwich, Conn. $2.50.

AMERICAN PLANNING AND CIVIC ANNUAL Harlean James, editor. 162 pp. American Planning and Civic Association, 901 Union Trust Building, Washington 5, D. C. $3.00.

THE MUNICIPAL YEAR BOOK, 1954—Editors: Clarence E. Ridley, Orin F. Nolting, Associate Editor: David S. Arnold, 613 pp. The International City Managers' Association, 1313 East 60th St., Chicago 37, Ill. $10.00

THE STEEL SKELETON—Volume One: Elastic Behavior and Design. By J. F. Baker. 206 pp. Cambridge University Press, London. Obtainable from the American Branch, 32 East 57th Street, New York 22, N. Y. $8.50

ENGINEERING FOR AGRICULTURAL DRAINAGE—By Harry Burgess Roe and Quincy Claude Ayres. 500 pp. McGraw-Hill Book Co., 330 West 42nd St., New York 36, N. Y. $7.50

RESIDUAL STRESSES IN METALS AND METAL CONSTRUCTION. Editor: W. R. Osgood. 363 pp. Reinhold Publishing Corp., 330 West 42nd St., New York 36, N. Y. $10.00

1953 SUPPLEMENTS TO ASTM STANDARDS Part 1; Ferrous Metals ($3.50); Part 2; Non Ferrous Metals ($3.50); Part 3, Cement, Concrete, Ceramics, Thermal Insulation, Roal Materials, Waterproofing, Soils ($3.50); Part 4, Paint, Naval Stores, Wood, Fire Tests, Sandwich Constructions, Building Constructions, Wax Polishes ($3.50). American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

Reports and pamphlets

THE WASHO ROAD TEST: Part 1: Design, Construction, and Testing Procedures—Special Report 18, Highway Research Board, 2101 Constitution Ave., Washington 25, D. C. $2.25

HIGHWAYS IN THE UNITED STATES—U. S. Department of Commerce, Bureau of Public Roads. Superintendent of Documents, Washington 25, D.C. $0.20

CALCIUM CHLORIDE IN CONCRETE—Manual CM-1, Calcium Chloride Institute, 909 Ring Building, Washington 6, D. C.

URBAN TRAFFIC CONGESTION—Bulletin 86, Highway Research Board, 2101 Constitution Ave., Washington 25, D. C. $0.60

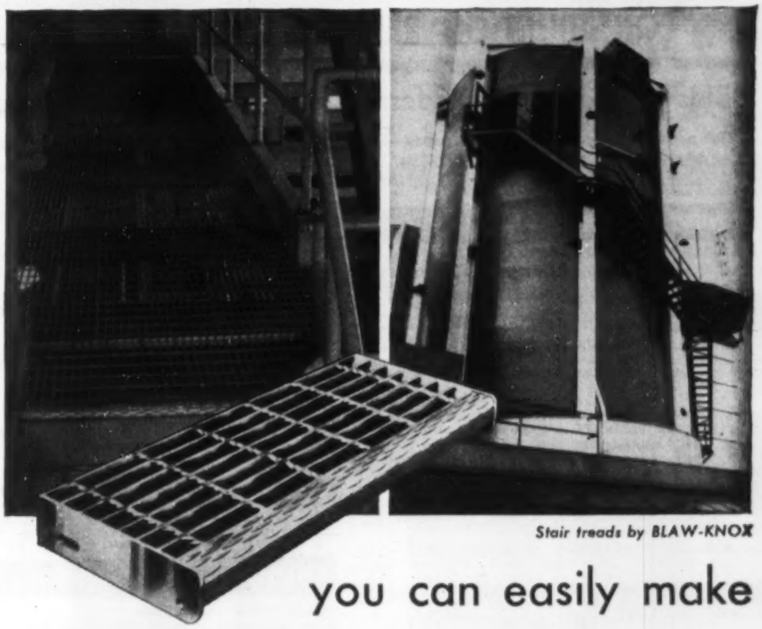
ROADSIDES: Their Use and Protection—Special Report 17, Highway Research Board, 2101 Constitution Ave., Washington 25, D. C. $0.75

SAMPLING AND TESTING OF READY MIXED CONCRETE—Publication No. 51, National Ready Mixed Concrete Association, 1325 E Street, N. W., Washington 4, D. C.

PARKING METERS: A Study of Their Number, Revenue and Use—Bulletin 81, Highway Research Board, 2101 D. C. $1.35

PROGRESS REPORTS OF INVESTIGATION OF RAILS AND JOINT BARS—Reprint Series No. 53, University of Illinois Engineering Experiment Station, Urbana, Ill. $0.30

BETTER LAWS FOR BETTER HIGHWAYS—Bulletin 88, Highway Research Board, 2101 Constitution Ave., Washington 25, D. C. $0.45



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J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

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▲ **Mass., West Springfield**—SCHOOL—BA 9/2—Town, High School Bldg. Comn., Town Hall, high school, Piper Rd. $2,900,000. Plans deposit $75, refundable. Extended date. Warren H. Ashley, 967 Farmington Ave., archts. CD 8/6.

▲ **Mass., Ashland**—SCHOOL—BA 9/9—Town, Albert C. Cook, supt. Schools, Central St. and F. W. Stedman, chn. Junior-Senior High School Planning Comn., Ashland, Junior Senior High School next to elementary school, Concord St. $1,000,000. Plans deposit $100, refundable. S. W. Haynes & Assoc., 336 Main St., Fitchburg, archts. CD 6/2, under LB.

▲ **Mass., Westfield**—COLLEGE—BA 9/10—State, Dpt. Educ., c/o Div. Bldg. Constr., 38 Chauncy St., Boston, E-409 Contr. 1, new state teachers college, Upper Western Ave. $3,025,000. Plans deposit $100, refundable. Abbott Assoc., Inc., 13 State St., Boston, archt. Cleverdon, Varney & Pike, 120 Tremont St., Boston, struct. engrs. CD 1/13.

▲ **R. I., Newport**—HIGH SCHOOL—BA 9/22—City, H. S. Comm., Office Supt. Schools, City Hall, Roger High School off Ruggles Ave. $2,200,000. Plans deposit $100. Extended date. Kelly & Gruzen, 73 Tremont St., Boston, Mass., archts. CD 8/10.

SOON LETS CONTRACT—BUILDINGS

▲ **Conn., Milford**—PLANT—Thermostat Div., 1225 Connecticut Ave., Bridgeport, soon lets contract masonry, steel heating controls mfg plant and office. $1,500,000. Leo F. Caproni, 1221 Connecticut Ave., Bridgeport, archt. CD 6/9.

Conn., West Hartford — PLANT — Niles-Bement-Pond, Charter Oak Blvd., soon lets contract, 180x361 ft. test and assembly plant, Charter Oak Blvd. $600,000-$700,000. Rossetti & DiCorcia, 185 Main St., Bristol, archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—Maine Turnpike Auth., 17 Bishop St., Portland,
W. H. Hinman, Inc., North Anson, Me. CA **$744,591**, est. $740,000. Contr. 220 Hy. and bridge constr. Augusta Interchange northern terminous of Augusta Exten., Augusta. CD 8/4, under LB.

▲† **Gil Wyner Co., Inc.**, 12 Newland St., Malden, Mass. CA **$1,188,315**. est. $1,400,000. aircraft parking area Naval Air Station, NOY 79818, Spec. 38330, BRUNSWICK, ME. First Naval Dist., 495 Summer St., Boston, Mass. CD 8/4, under LB.

▲ **NEW HAMPSHIRE**—State Dpt. P. Wks. & Hys., State House Annex, Concord,
R. G. Watkins & Sons, Inc., Mill Yard, Amesbury, Mass. LB **$1,125,629**, est. $1,100,000. hy. and bridge constr. Everett Turnpike, FU 326 (10), FU 326 (3), Nashua. Bids Aug. 13. CD 8/3.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Lowell Housing Auth.**, 18 Market St., Lowell, Mass. rejected bids June 11, PHA 1-3 HOUSING 372 units, LOWELL, MASS. Will re-advertise. **(Correction—status)**. CD 6/29, under CA.

▲ **Wexler Constr. Co.**, 118 Needham St., Newton Highlands, Mass. CA, **$1,626,600**, est. $1,500,000. Meadowbrook Junior High SCHOOL, NEWTON, MASS. City, P. Bldgs. Comn., City Hall, Newton, Mass. CD 7/16 under LB.

▲ **Farina Brothers Co., Inc.**, 429 Watertown St., Newton, Mass. LB **$6,090,641**. state HOSPITAL, WORCESTER, MASS. State, Dpt. Mental Health, c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Mass. Bids Aug. 12. CD 7/20.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

PENNSYLVANIA—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg,
C. J. Langenfelder & Son, Inc., 8427 Pulaski Hy., Baltimore, Md., CA **$928,624**, 0.76 mi. northeastern exten. of Pennsylvania Turnpike at Plymouth Meeting, incl. intersection with Delaware River Exten., Montgomery Co. R. B. Stone, c/o owner, ch. engr. CD 10/28.

▲† **Williams Constr. Co.**, Box 145, Middle River, Baltimore, Md., CA **$2,066,969** aprons, service roads in apron area, ENG-36-109-54-189, DOVER, DEL. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids June 11. CD 6/24, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **East Hill Estates**, c/o Herman York, archt., 90-04, 161 St., Jamaica, N. Y. Owner Builds. **$1,700,000**. 100 HOUSES, 27-acre tract, Woodbury Rd., opposite Ketchum Rd., HICKSVILLE, N. Y.

Davis Rose & Assoc., c/o Boak & Raad, archts., 175 5th Ave., New York, N. Y. Owner Builds. **$900,000**. 16 story APARTMENT, 20 E. 68 St., NEW YORK, N. Y.

▲ **Sam Minskoff & Sons**, 521 5th Ave., New York 17, N. Y. Own Forces. **$6,000,000**. 19-story penthouse APARTMENT with GARAGE, 5 Ave. and 8 St., New YORK, N. Y. Boak & Raad, 175 5th Ave., New York, N. Y., archts. Work underway. CD 1/15/52.

▲ **The Cogswell Constr. Co.**, 513 Park Ave., Baltimore, Md. CA **$2,415,000**. masonry Pimlico Junior High SCHOOL, BALTIMORE, MD. City, Bureau Bldg. Constr., 410 Municipal Bldg., Baltimore, Md. CD 8/10, under LB.

Fabian Constr. Co., 3024 Spaulding Ave., Baltimore, Md. Owner Builds. **$990,000**. 110 brick HOUSES, Battle Grove Rd. and Fabian Lane, North Point Village, near BALTIMORE, MD.

† **John A. Volpe Constr. Co.**, 1507 M St., N.W., Wash., D. C., LB **$917,845**, LAW SCHOOL bldg., Howard University, WASH., D. C. General Services Admin., Public Buildings Service, Regional Office Bldg., 7 and D Sts., S.W., Wash., D. C. Bids Aug. 12. CD 7/16.

SOUTH

BIDS ASKED—BUILDINGS

▲ **W. Va., Logan**—HIGH SCHOOLS—BA 9/20—Logan Co. Bd. Educ., Court House, Logan, high school at Logan, $500,000; gymnasium at Logan High School, $300,000. Plans deposit $50 each. High School at Man, $400,000; gymnasium at Man High School, $300,000. Plans deposit $40 each. Frampton & Bowers, Huntington, W. Va., archts. on schools. Lewis E. Stettler, Huntington, W. Va., archt. on gymnasiums. CD 5/13/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **VIRGINIA**—State Hy. Dpt., 1221 E. Broad St., Richmond,
Rea Constr. Co., Pineville Rd., Charlotte, N. C. CA **$1,656,718**, overpass to eliminate Norfolk and Western grade crossing on Jefferson St. in Roanoke, Roanoke Co. Bids Aug. 4. CD 8/9, under LB.

▲† **Wright Contg. Co.**, 504 25 Ave., Columbus, Ga. LB **$988,584**. Base Bid, **$1,017,707**. Alt., Sect. A;
Kaminer Constr. Co., Box 2055, Greenville, S. C. LB **$587,404** base bid, **$597,374**. Alt., Sect. B, aprons, taxiways, hydrant refueling, bulk fuel storage facility, Pope Air Force Base, ENG-31-075-54-26, FORT BRAGG, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. Bids Aug. 5. CD 7/30.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **McDevitt & Street Co.**, Builders Bldg., Charlotte, N. C. CA **$2,000,000**. remodeling, addn. to DEPARTMENT STORE, CHARLOTTE, N. C. Beik Bros Co., 115 E. Trade St., Charlotte, N. C. A. G. Odell Jr. & Assoc., 109 W. Third St., Charlotte, N. C., archts. Bids July 22. CD 11/11.

▲ † **T. A. Loving & Co.**, Bank of Wayne Bldg., Goldsboro, N. C. LB **$731,344**, Item 1; LB **$698,789**, Item 2; LB **$686,641**, Item 3, Marine Corps EXCHANGE BLDG, Spec. 40506, NOY 80190. CAMP LEJEUNE, N. C. P. Wks. Office, Marine Corps Base, Camp Lejeune, N. C. Bids July 30.

Hardin & Traver, 350 Robin Hood Rd., N. E., Atlanta, Ga., CA **$939,998**, WAREHOUSE, OFFICE, ATLANTA, GA. Alterman Bros., 533 Whitehall St. S. W., Atlanta, Ga. Bids Apr. 8. CD 4/4 under LB.

J. E. Pyle, 207 W. Second St., Little Rock, Ark. CA **$943,019**. high SCHOOL, Vivian, SHREVEPORT, LA. Caddo Parish School Bd., Shreveport, La. Bids Aug. 3, awarded Aug. 4. CD 8/10.

MIDDLE WEST

BIDS ASKED—BUILDINGS

▲ **O., Oxford**—ADMINISTRATION BLDG.—BA 8/31—State Dpt. P. Wks., State Office Bldg., S. Front St., Columbus, admin. bldg. for Miami University, $1,284,000. Plans deposit $20. Charles F. Cellarius, 906 St. Paul Bldg., Cincinnati, archt. CD 6/30.

▲ **Wis., Madison**—PRACTICE—BA 9/1—University of Wisconsin, Madison, indoor practice bldg. $1,000,000. Plans deposit $50. Extended date. F. Scott & F. Scott Jr., 5623 N. Lake St., Milwaukee, archts. Chas. S. Whitney, 724 E. Mason St., Milwaukee, engr. CD 7/9.

▲ **Wis., Whitefish Bay**—HIGH SCHOOL—BA 9/2—Dominican High School Corp., c/o Brimever, Grellinger & Rose, archts., 757 N. Broadway, Milwaukee, Zone 2, high school. $1,000,000. Extended date. CD 8/4.

Wis., Watertown—COLLEGE—BA 9/10—Northwestern College, 525 College Ave., 3 story, 40x259 ft., one story, 50x90 ft., and 1 and 2 story 35x65 ft. college buildings. $950,000. Plans deposit $50. Law, Law, Potter & Nystrom, 121 S. Pinckney St., Madison, archts. CD 8/26/53.

▲ **Ill., Chicago**—TRAFFIC COURTS, OFFICES—BA 9/13—City, City Hall, traffic courts and traffic offices, reconstr. 7-story bldg. $1,700,000. Paul Gerhardt, c/o owner, city archt., Chicago Bureau Engrg., 20 N. Wacker Dr., Zone 6, engr. CD 9/25/53.

Ill., Chicago—APARTMENTS—Bids Asked—Owner, c/o Edward Marks, archt., 3900 Emerson St., Evanston, four 80-unit apartments, N. Damen and Hood Sts. $800,000.

SOON LETS CONTRACT—BUILDINGS

▲ **Wis., Milwaukee**—HOSPITAL—Mount Sinai Hospital, 908 N. 12 St., Milwaukee, Zone 3, T-shaped, 42x220 ft., 42x20 ft. Concrete, brick hospital addn. $2,400,000. A. Epstein & Sons, 2001 W. Pershing Rd., Chicago, Ill., archts. CD 7/23.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **J. M. Corbett Co.**, 2501 Salt St., Chicago, Ill., LB, **$1,246,820**, 2 underground structures in Cook County, Sites C-41 and C-44, ILLINOIS, U. S. Eng., 475 Merchandise Mart, Chicago, 54, Ill. Bids July 29. CD 7/16.

▲ **James McHugh Constr. Co.**, 6449 S. Park Ave., Chicago, Ill. LB, **$1,123,381**, reconstr. and removing La Salle St. Station railroad track, structure over R/W of Congress Expressway, CHICAGO, ILL. Chicago Transit Auth., Merchandise Mart, Chicago, 51, Ill. Bids July 27. CD 7/8.

WISCONSIN—State Hy. Comn., State Hy. Office Bldg., Madison,
Schuster Constr. Co., Denmark, Wis., CA, **$668,449** 7.287 mi. U. S. Hy. 141, Proj. F 020-3 (8), Brown Co. Bids Aug. 3. CD 8/9, under LB.

MICHIGAN—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,
Loselle Constr. Co., 1555 Goddard St., Wyandotte, Mich. LB **$753,751**, est. $780,000. c. conc. 3.331 mi. M-29, U 50-51 C2 (U 423 2), Macomb Co. Bids Aug. 11. CD 8/4.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a suupiementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily issue in which last previous report was published.

Symbols and Abbreviations Include:

†	**Federal Government**
▲	**Project of $1,000,000 or over.**
ENR	**Engineering News-Record**
CD	**Construction Daily**

For additional reports see Construction Daily.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **M. W. Kellogg Co.,** 225 Broadway, New York, N. Y. CA Est. **$17,000,000.** Petrochemical PLANT for 300 tons daily output of anhydrous ammonia and addnl. processing to make nitrogen products, Lima-Toledo area, OHIO. Standard Oil Co. of Ohio, 3038 Broadway, Cleveland, O.

▲ **Huber, Hunt & Nichols,** 2450 S. Tibbs Ave., Indianapolis, Ind., LB, **$4,090,000,** 5 story, bsmnt., brick, stone Community HOSPITAL, 16 and Ritter Sts., INDIANAPOLIS, IND. Indianapolis Hospital Development, Inc., R. A. Effromson, pres., 615 N. Alabama St., Indianapolis, Ind. Bids Aug. 11. CD 7/27.

Aldrich Home Builders, 5826 Dempster St., Morton Grove, Ill., Own Forces, **$675,000,** 50 HOMES, ARLINGTON HEIGHTS, ILL.

▲ **Herlihy Mid-Continent Co.,** 135 So. LaSalle St., Chicago 3, Ill. LB **$1,298,960.** PARKING GARAGE, Grand and Rush Sts., CHICAGO, ILL. City, City Hall, Chicago, Ill. Schmidt, Garden & Erikson, 104 S. Michigan St., Chicago 3, Ill. archts. CD 2/27/53.

A. L. Jackson Co., 161 E. Erie St., Chicago 11, Ill., CA **$950,000,** substructure for 22-story APARTMENT corner of Chestnut and DeWitt Place, CHICAGO, ILL. La Salle National Bank, Trust 15885, 135 S. La Salle St., Chicago, Ill. Hirschfield & Pawlan, 327 S. La Salle St., Chicago, Zone 4, archts. Site Changed. (**Correction-contractor**). CD 5/7, under CA.

▲ **John Griffiths & Son Constr. Co.,** 228 N. La Salle St., Chicago 1, Ill., CA **$1,300,000,** malt PLANT ADDN. and OFFICE, CHICAGO, ILL. Albert Schwill & Co., 141 W. Jackson Blvd., Chicago 4, Ill. Bids July 12, awarded July 30. CD 6/30.

Leslie C. Ullrich, 109 N. Park St., Mundelein, Ill., CA **$908,593,** HIGH SCHOOL Addn., Ingleside, FOX LAKE, ILL. School District No. 124, c/o Grant High School, Fox Lake, Ill. Bids Mar. 16, awarded July 27. CD 2/18.

Power Constr. Co., 125 Marion St., Oak Park, Ill., CA, **$734,550,** Whittier SCHOOL addn., OAK PARK, ILL. School District No. 97, 122 Forest Ave., Oak Park, Ill. Bids July 28, awarded Aug. 6. CD 8/9, under LB.

Fritz Constr. Co., 138 N. Frances St., Madison, Wis., LB, **$715,774,** general contract Crawford Heights SCHOOL, MADISON, WIS. Bd. Educ., 351 W. Wilson St., Madison, Wis. Bids Aug. 10. CD 7/16.

▲ **John Dahlman Constr. Co.,** 4200 N. 1 St., Milwaukee, 2, Wis., CA, **$1,632,500,** general contract HIGH SCHOOL, WAUWATOSA, WIS. Lutheran High School Assn. of Greater Milwaukee, 1859 N. 13 St., Wauwatosa, Wis. Bids Aug. 3, awarded Aug. 11. CD 7/20.

▲ **Thomsen-Abbott Constr. Co.,** Marshfield, Wis., CA, **$1,149,230,** general contract COURT HOUSE and JAIL, WISCONSIN RAPIDS, WIS. Wood Co., Wisconsin Rapids, Wis. Bids Aug. 5. CD 6/15.

▲ **Barton-Malow Co.,** 2631 Woodward Ave., Detroit, Mich. CA **$1,500,000.** STUDENTS ACTIVITIES BLDG., 2 story cafeteria and auditorium, Florence and Petoskey Sts., DETROIT, MICH. University of Detroit, 4001 W. McNichols Rd., Detroit, Mich. Bids July 20. CD 7/9.

▲ **Herman Gundlach, Inc.,** Houghton, Mich. CA **$1,100,000.** 5 story DORMITORY, MICHIGAN College of Mining & Technology, HOUGHTON, MICH. State, A. N. Langius, dir. State Bldg. Dpt., Lewis Cass Bldg., Lansing, Mich. CD 7/30.

▲ **Hy Standard Builders,** 19469 James Couzens St., Detroit 35, Mich. Owners Builds. **$5,500,000.** Harper Haven Homes, 490 brick single HOUSES Harper and 12 Mile Rd. Section, ST. CLAIR SHORES, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—BUILDINGS

Tex., Brownwood—DORMITORY—BA 9/2—Howard Payne College, Brownwood, 4 story brick, concrete, steel frame girl's dormitory, hydraulic elevator, etc. $800,000. Plans deposit $30. Extended date. Wilson & Patterson, 202 Majestic Bldg., Fort Worth, archts. CD 7/8.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

KANSAS—State Hy. Comn., Wichita,

Standard Paving Co., 2119 E. 11 St., Tulsa, Okla. CA **$895,573.** c. conc. 1.841 mi. Proj. 54-87 U 038-3 (3), Sedgwick Co. Bids Aug. 6. CD 7/26.

▲ **R. H. Fulton & Co.,** Box 1526, Lubbock, Tex., CA, 18- to 20-in. crude oil pipe line 395 mi. from Merino, Colo. to Burns, Kan.;

Panama Williams Co., Melrose Bldg., Houston, Tex. CA, 86 mi. from Burns, Kan. to Great Bend, Kan. Total est. **$25,000,000.** COLORADO-KANSAS Arapahoe Pipe Line Co., (Sinclair Pipe Line Co., Sinclair Bldg., Independence, Kan. and Pure Oil Co., 36 E. Wacker Dr., Chicago, Ill.). CD 7/1.

BUILDINGS

LOW BIDS AND CONTRACTS

L. J. McNeary Realty Co., 8421 Gravois Rd., St. Louis 23, Mo. Owner Builds. **$668,500.** seventy-seven 1 story, 24x40 ft., brick, concrete RESIDENCES, Hy. 21 Solar Lane and Juniper Court, MEHLVILLE (ST. LOUIS 23 P.O.), MO.

S. P. Shakofsky Constr. Co., 6601 Delmar Blvd., University City 5, Mo. CA **$680,837.** general contract 2 story, part bsmnt., 69x272 ft., 43x149 ft., brick, steel, rein.-con. elementary SCHOOL Kienlen and Wellsmar Aves., WELLSTON (ST. LOUIS 14 P.O.), MO. Wellston School Dist., Millard M. Halter, supt., 6315 Wells Ave., Wellston, Mo. CD 7/23, under LB.

▲ **Brown & Root, Inc.,** Box 74, Houston, Tex., LB **$1,956,616.** Contr. No. 29, main POWER PLANT structure, AUSTIN, TEX. City, City Hall, Austin, Tex. Bids Aug. 10. CD 7/15.

▲ **Robert E. McKee, General Contractor, Inc.,** Box 2848, Dallas, Tex., LB, **$1,711,000,** COLISEUM-GYMNASIUM, DALLAS, TEX. Southern Methodist University, Dallas, Tex., Bids Aug. 10. CD 7/13.

FAR WEST

BIDS ASKED—BUILDINGS

Calif., Los Angeles—SCHOOL—BA 9/1—Los Angeles Bd. Educ., 1425 S. San Pedro St., strengthen, modernize Garfield High School, $600,000, J. G. Middleton, 6311 N. Figueroa St., Los Angeles, engr. CD 7/31/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Scheumann & Johnson, Lloyd Bldg., Seattle 1, Wash. CA, **$629,568,** Unit No. 6, hydro project incl. fish screens, etc. CENTRALIA, WASH. City, City Hall, Centralia, Wash. Bids July 27. CD 8/4, under LB.

▲ **J. A. Terteling & Sons,** Box 1428, Boise, Idaho, CA, Total est. **$7,000,000,** freight switching yarc and control tower for railroad yard expansion, PASCO, WASH. Northern Pacific Hy. Co., H. R. Peterson, ch. engr., 175 E. 5 St., St. Paul, Minn. CD 7/15/53.

† **J. G. Watts Constr. Co.,** 4538 S.W. Macadam St., Portland, Ore., CA **$561,735,** ammo normal maintenance facility, Umatilla Ordnance Depot. Eng-45-164-54-26. UMATILLA, ORE. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids June 15, awarded Aug. 10. CD 6/22, under LB.

▲ **CALIFORNIA**—State Div. Hys., P. Wks. Bldg., Sacramento,

Fredrickson & Watson Constr. Co., 873 81st Ave., Oakland, Calif. and **M. & K. Corp.,** Financial Center Bldg., San Francisco, Calif., LB **$1,661,111.** portion of bridge, pedestrian undercrossing, road work, etc. at Eastshore Freeway between Market and 11 Sts., Oakland, Alameda Co.;

Ukropina-Polich-Kral and John R. Ukropina, P.O. Box 105, San Gabriel, Calif., LB **$737,020,** rein.-con. open sprandrel arch and slab span bridge across Dog Creek, near Redding, Shasta Co. Bids Aug. 4. CD 7/16.

† **Clyde W. Wood & Sons, Inc.,** 6900 Tujunga Ave., Los Angeles, Calif. LB **$513,500.** est. $775,000. addnl. rock protection Los Angeles River, Victory Blvd. to Los Feliz Blvd., Los Angeles Co., CIVENG-04-353-55-1, CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Aug. 5. CD 7/28.

▲ **W. H. Wisheropp Co.,** 856 34 Ave., Oakland, Calif., LB **$439,716,** clearing, grading, etc. S. F. Defense Area, Contra Costa Co. SF-25-C and L. ENG-04-203-55-5;

Herbert E. Ellis, P. O. Box 146, Station A, Berkeley, Calif., LB, **$469,956,** site clearing, grading, etc. S. F. Defense Area, Contra Costa Co. SF-09-C & L, ENG 04-203-55-6;

Campbell Constr. & Equip. Co., 1150 Folsom St., San Francisco, Calif., LB, **$559,331,** grading, road work, etc. at Angel Island Site, S. F. Defense Area, Marin Co. SF-91-C & L, ENG 55-8;

MacDonald Engrg. Co. of Calif., 855 Bryant St., San Francisco, Calif., LB, **$305,537,** clearing, grading, bldgs. at Presidio of S. F., S. F. Defense Area, San Francisco, SF89-C & L, ENG 55-7. CALIFORNIA. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. Bids Aug. 5.

▲† **Stolte, Inc.,** 8451 San Leandro St., Oakland,
Gallagher & Burk, Inc., 344 High St., Oakland, and **Lee Stephens,** P. O. Box 316, French Camp, Calif., CA **$1,663,806,** earthwork, structures, surf. for relocation of California State Hy. No. 6, Monticello Dam to Capell Valley Rd., Yolo, Napa and Solano Counties, DC 4182, CALIFORNIA. Bureau Reclamation Dpt. Interior, Winters, Calif. Bids July 7, awarded Aug. 6. CD 7/15, under LB.

▲ **Wismer & Becker & Assoc.,** 1731 "S" St., Sacramento, Calif., CA **$1,021,120,** est. $1,000,000 Pump Units 4 and 5 at five pumping plants on Colorado Power Aqueduct, San Bernardino and Riverside Counties, LOS ANGELES, CALIF. Metropolitan Water Dist. of Southern Calif. 306 W. 3 St., Los Angeles, Calif. Bids Aug. 6, CD 8/12, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Century Builders, 900 12 Ave., Seattle, Wash., Day Labor **$752,500,** 61 HOUSES at 154 Ave. S. E. and S. E. 38 St., SEATTLE, WASH.

▲ **Merrell Steel Building Co.,** 2207 N. W. Front St., Portland, Ore., CA, **$1,000,000.** fir plywood PLANT, INDEPENDENCE, ORE. National Plywood Co-operative, Independence, Ore. R. L. Tidball, Concord Bldg., Portland, Ore., engr. Awarded Aug. 6.

A. C. Edmon, 4120 S. E. Gladstone St., Portland, Ore., CA, **$601,500,** Wm. Clark Elementary SCHOOL, PORTLAND, ORE., Multnomah School Dist. 1, 631 N. E. Clackamas St., Portland, Ore., Bids July 26, awarded Aug. 6. CD 8/5, under LB.

▲ **Wells P. Goodenough,** 49 Wells Ave., Palo Alto, Calif., LB, **$2,654,637.** DORMITORY bldgs., dining room, kitchen and lounge, PALO ALTO, CALIF. Stanford University, Bd. Trustees, Palo Alto, Calif. Spencer & Ambrose, 251 Kearney St., San Francisco, Calif., archts. CD 8/4.

Torthorne Corp., Blue Reading Corp. and Hirsch Victory Corp., 1011½ S. Western St., Los Angeles, Calif. Owner Builds. **$659,950.** 65 frame, stucco DWELLINGS on 228 St., 228 Pl., 229 Pl. in Tract 19463, TORRANCE, CALIF.

CANADA

BIDS ASKED—BUILDINGS

Ont., Midland—SCHOOL—BA 9/1—Midland-Penetang District High School Bd., R. S. King, secy.-treas., Midland, high school on outskirts of town, $800,000. Page & Steele, 72 St. Clair Ave. W., Toronto, archts. CD 8/12.

AMERICANS ABROAD

BIDS ASKED—HEAVY CONSTRUCTION

▲ Bids are being taken on the following project, under recently announced International competitive bidding of NATO.

BELGIUM

Service General des Constructions Militarirs, Direction Travaux Speciaus, Section Electricite et Balisage, Caserne Prince Baoudouin, Place Dailly, Brussels. Lighting at Weelde, Zoersel, Ursel, Bertrix and St. Hubert Airfields. Total est. $1,000,000. Interested firms should report before September 1. For information on bidding NATO projects see 6/25, Construction Daily.

Proposed Projects———

WATER SUPPLY

▲ **Calif., Pomona**—City, City Hall, voted **$3,700,000** bonds July 20, water sys. imprvs. CD 6/25.

▲ **Colo., Fort Collins**—City, Water Dpt., Ft. Collins, filtration plant, part of **$1,500,000** program. Harold Hoskins & Assocs., 800½ 9 St., Greeley, consult. engrs. CD 4/20.

▲ **Kan., El Dorado and Augusta**—Socony Vacuum Oil Co., Augusta, and Skelly Oil Co., El Dorado, 32-mi. pipe line from Arkansas River for water supply **$1,250,000.**

SEWERS, WASTE DISPOSAL

▲ **Md., Salisbury** — Salisbury Incinerator & Sewage Treatment Plant Comn., Salisbury, sewage disposal sys., Schedule B, south side pumping station, force main, water main extens., units of primary treatments, incl. control bldg.; Schedule C, secondary treatment units, average flow design 3.6 m.g.d., **$1,000,000,** Gardner & Sterling, P. O. Box 74, Salisbury, consult. engrs. Bids B and D were rejected. CD 10/14/53, under LB.

▲ **Mo., Kansas City**—City, Dpt. P. Wks., City Hall, voted **$1,500,000** bonds Aug. 3, sewers. O. M. Nichols, sewer engr. CD 8/12/52.

▲ **Mo., Springfield**—City, **$6,600,000** bond election Aug. 17, sewerage rehabilitation, A. C. Kirkwood & Assoc., 3102 Troost St., Kansas City, Mo., consult. engrs. CD 7/7.

▲ **Alaska, Anchorage**—Eastchester Pub. Utility Dist., Anchorage, sewer sys. with outfall in Eastchester area adjacent to Anchorage, **$1,000,000.** G. Johnson, Anchorage, consult. engr.

BRIDGES

▲ **Wis., Milwaukee**—City, City Hall and Chicago, Milwaukee St. Paul and Pacific R.R. Co., W. G. Powrie, ch. engr. Union Station, Chicago 6, Ill., Hampton Ave. Railway Underpass **$1,013,965.** Lloyd D. Knapp, city engr. CD 12/3/53.

▲ **ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto,
Burlington—Burlington Beach Skyway. est. **$15,500,000.** bridge over Burlington Canal. est. **$12,600,000.** The Foundation of Canada Engrg. Corp., Ltd., 200 Bloor St. E. Toronto, Ont. in association with P. L. Prattey, 1117 St. Catherine St. W., Montreal, Que., consult. engrs. CD 8/4/53.

STREETS AND ROADS

▲ **LOUISIANA**—State Hy. Dpt., Highway Office Bldg., Baton Rouge, **$50,000,000** bond election Nov. 2, for highway construction and maintenance.

▲ **MASSACHUSETTS**—Massachusetts Turnpike Auth., 80 Boylston St., Boston,

Sect. A—N. Y. State Line to Lee 13.7 mi. to incl. Chapel St. Rte. 20 bridge in Lee. Toll Rd., **$16,800,000,** DeLeuw, Cather & Brell, 345 Boylston St., Boston, engrs.

Sect. B—9.41 mi. to incl. Algerie Rd. bridge in Otis. Toll Rd., **$12,700,000.** Brown & Blauvett, 468 Fourth Ave., New York, N. Y., engrs.

Sect. C—13.39 mi. Otis, Toll Rd., **$17,400,000,** Thomas Worcester, Inc., 85 State St., Boston, engrs.

Sect. D—Westfield River Bridge 0.25 mi. Westfield, Toll Rd., **$1,000,000.** Howard, Needles, Tammen & Bergendoff, 80 Boylston St., Boston, engrs.

Sect. F—Connecticut River Bridge 0.27 mi. West Springfield-Springfield, Toll Rd., **$1,000,000.** Howard, Needles, Tammen & Bergendoff, 80 Boylston St., Boston, engrs.

Sect. G—14.94 mi. West Springfield-Palmer, Toll Rd., **$12,000,000.** Charles A. Maguire & Assoc., 14 Court Square, Boston, engrs.

Sect. H—14.94 mi. to incl. Clark-Sturbridge Bridge. Palmer to Wilbraham line, Toll Rd., **$11,500,000,** Charles T. Main, Inc., 80 Federal St., Boston, engr.

Sect. I—3.53 mi. Boston to New York State Line, Charlton-Sturbridge, Toll Rd., **$2,300,000,** Fay, Spofford & Thorndike, 11 Beacon St., Boston, engrs.

Sect. J—9.50 mi. to incl. West St.-Auburn Bridge, Toll Rd., **$6,750,000,** Fay, Spofford & Thorndike, 11 Beacon St., Boston, engrs.

Sect: K—15.86 mi. Auburn-Hopkinton, **$11,500,000,** Hayden, Harding & Buchanan, Park Square Bldg., Boston, engrs.

Sect. L—18.87 mi. from and to incl. Wood St.-Hopkinton Bridge Rte. 128, Hopkinton-Needham, Toll Rd., **$13,200,000,** Clarkeson Engineering Co., Inc., 285 Columbus Ave., Boston, Zone 16, engr. CD 4/1.

AIRPORTS

▲† **Calif., Muroc**—HANGAR UTILITIES—U. S. Eng., 751 S. Figueroa St., Los Angeles, plans by Van Dyke & Barnes, 234 Beverly Blvd., Los Angeles, hangar and utilities, Edwards Air Force Base, **$2,435,000.** CD 7/13.

▲† **Calif., San Bernardino**—PARKING APRON, etc.—U. S. Eng., 751 S. Figueroa St., Los Angeles, plans by Kistner, Wright & Wright, 816 W. 5 St., Los Angeles, extending parking apron, stabilize taxiway shoulder, fire extinguishing sys., utilities, Norton Air Force Base, **$1,477,000.** CD 11/13/51.

▲† **Md., Andrews Air Force Base**—AIRFIELD PAVEMENTS—U. S. Eng., First and Douglas Sts. N. W., Wash., D. C., airfield pavements, communications and navigational aids, operational facilities, aircraft maintenance facilities, utilities and land acqusition,, Andrews Air Force Base, **$2,059,000.** CD 10/1/51.

▲† **Nev., Las Vegas**—BUILDINGS, etc.—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., misc. bldg., fencing and utilities, Nellis Air Force Base. **$1,455,600.** Koebig & Koebig, 3142 Wilshire Blvd., Los Angeles, Calif., consult. engrs. CD 12/10/52.

PUBLIC BUILDINGS

▲ **Calif., El Monte**—SCHOOL—El Monte Union High School District, 630 S. Tyler Ave., plans by Kistner, Wright & Wright, 816 W. 5 St., Los Angeles, 70,000 sq. ft., frame, stucco Arroyo High School **$1,500,000.** CD 3/2/53.

▲ **Calif., Long Beach**—SCHOOLS—Long Beach Unified School Dist., 715 Locust Ave., **$32,500,000** bond election November 2, schools. CD 11/16/50.

▲ **Calif., Pasadena**—SCHOOLS—Pasadena School Dist., 351 S. Hudson Ave., plans by R. H. Ainsworth, 1199 E. Walnut St., Pasadena, rehabilitate and Pasadena City College addns., **$1,060,000;** plans by John N. Douglass, 3733 E. Colorado St., Washington Junior High School addn. **$654,000;** plans by Wm. Henry Taylor, 285 S. Los Rolles Ave., Pasadena, Wilson Junior High School addn., **$598,000;** plans by Marston & Weston, 25 S. Euclid Ave., Pasadena, LaCanada Junior High School addn., **$723,000.** CD 6/15.

▲ **Calif., Santa Ana**—SCHOOL—Santa Ana City School Dist., 1415 French St., plans by Harold Gimeno, 1416½ N. Main St., junior high school, 7 bldgs., **$1,250,000.** CD 6/15/53.

▲ **Calif., Watsonville** — SCHOOLS — Watsonville Elementary School District, Watsonville, **$1,650,000** bond election Nov. 2, addnl. classrooms and schools. CD 5/5.

▲ **Colo., Colorado Springs**—SCHOOLS—Bd. of Education, School District No. 11, El Paso Co., 406 N. Weber St., bond election Oct. 4, schools, approx. **$5,000,000.**

▲ **Colo., Pueblo**—SCHOOLS—Public School Dist. 60, Pueblo, bond election November 2 to vote **$5,000,000** bonds, schools. CD 10/23/50.

▲ **Conn., Stamford**—SCHOOL—City Bd. of Educ., Office Supt. of Schools, 151 Broad St., high school, over **$1,000,000.**

▲ **Conn., Enfield**—PRISON—State, Ralph G. Macy, P. Wks. Comr., State Office Bldg., Hartford, plans by Sherwood, Mills & Smith, 65 Broad St., Stamford, new state prison, **$15,000,000.**

▲ **Ill., Chicago**—HOUSING—Chicago Housing Auth., 608 S. Dearborn St., Zone 5, plans by Charles W. Nicol, 23 E. Jackson St., Chicago, Zone 4, three apartment bldgs., area Madison, Van Buren and Western and Rockwell Sts., **$4,500,000.** CD 2/2/50.

▲ **Ill., Springfield**—SCHOOLS—City, **$4,000,000** bond election November 2, three junior high schools and elementary school addns. Hadley & Worthington, Meyers Bldg., archts. making preliminary plans. CD 9/20/49.

▲ **Mass., Chelsea**—SCHOOL—City, City Hall, senior high school, **$1,725,000.** CD 2/15/54.

▲ **Mass., Medfield**—ADMISSION-TREATMENT—State, Dpt. Mental Health, c/o Div. Bldg. Constr., 38 Chauncey St., Boston, plans by Leland & Larson, 814 Statler Bldg., Boston, M-716 admission-treatment bldg., State Hospital, **$2,000,000.** CD 12/21/44.

▲ **Mich., East Lansing**—APARTMENTS—State, A. N. Langius, dir., State Bldg. Dpt., Lewis Cass Bldg., Lansing, plans by Manson & Carver, 517 N. Washington St., Lansing, 200 brick, steel apartments for married students and family, **$1,750,000.** CD 3/9/53.

▲ **Mich., Eloise**—HOSPITAL—Wayne County, Bd. Institutions, Frank E. Kelley, chn., 608 Griswold Bldg., Detroit, **$14,300,000** bond election Nov. 2, hospital for acute illnesses, **$12,000,000;** nurses and internes resident bldg., **$900,000;** laundry and bakery, **$900,000;** therapy and recreation bldg., **$500,000,** Wayne County General Hospital and Infirmary. CD 5/11/54.

▲ **Mich., Holland**—HOSPITAL—City, voted **$1,100,000** bonds Aug. 3, Holland Hospital addn. H. E. Beyster & Assoc., Inc., 2000 Industrial Bank Bldg., Detroit, archts. CD 7/8.

▲ **Mich., Pontiac**—COUNTY BLDG.—Oakland Co., H. Lloyd Clawson, chn. Special Comn., defeated **$4,500,000** bonds, county bldg., West Blvd. CD 1/26.

▲ **Minn., Hibbing**—HOSPITAL—Village, R. Michelson, clk., municipal hospital addn., **$1,000,000.**

▲ **Mo., Kansas City**—HOSPITAL IMPRVS.—City, Dpt. P. Wks., City Hall, voted **$1,037,000** bonds Aug. 3, hospitals, complete fire control program wiring, plumbing at 3 hospitals; rehabilitation of wing and receiving ward at general hospital No. 1. CD 11/29/51.

▲ **Mo., Kansas City**—POLICE BLDGS., ETC.—City, Dpt. P. Wks., City Hall, voted bonds Aug. 3, police bldg., enlargement garage, **$1,000,000;** public works field headquarters, **$657,000;** 8 fire stations, **$1,405,000.** CD 6/30.

▲ **Mo., Kansas City**—PRISON FARM—City, Dpt. P. Wks., City Hall, voted **$1,433,000** bonds Aug. 3, enlargement of municipal prison farm.

▲ **O., Columbus**—Upper Arlington Bd. Educ., 2100 N. Devon Rd., Zone 12, bond election November 2, school imprvs. and constr. **$1,800,000.** CD 11/7/52.

▲ **O., Toledo**—SCHOOLS—Bd. Educ., Washington Twp., 5700 Whitmer Dr., bond election November 2, school building program, **$1,850,000.** CD 7/23.

▲† **Okla., Boise City**—HELIUM PLANT—Bureau Reclamation, Dpt. Interior, Interior Bldg., 19 and C Sts., N.W. Wash. 25, D. C., helium plant. **$6,000,000.**

▲† **Va., Little Creek**—OFFICERS QUARTERS—P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, plans by Bernard B. Spigel, Kresge Bldg., Norfolk, 300-man bachelor officers quarters. **$1,000,000.**

▲ **Va., Marion**—MAXIMUM SECURITY BLDG.—Commonwealth of Va., 117 N. Ballard St., Richmond, plans by Eubank & Caldwell, Boxley Bldg., Roanoke, maximum security bldg. for the criminal insane. **$1,300,000.** Stuart Moore, c/o owner, engr.

▲ **Wash., Bellingham**—SCHOOL—School Bd., Bellingham, **$1,000,000-$1,200,000** bond election November 2, school. CD 6/14.

▲ **Wash., Grandview**—HIGH SCHOOL—School Bd., Grandview, bond election November 2, junior-senior high school. **$1,000,000.** J. Villesvik, Larson Bldg., Yakima, archt. CD 4/19/51.

▲ **Wis., Madison**—AUDITORIUM, CIVIC CENTER—City, Madison, bond election November 2, municipal auditorium and civic center, **$4,000,000.**

▲ **Wis., Superior**—TRAINING SCHOOL, etc.—Bd. of Regents, of State College, Madison, plans by Roger C. Kirchhoff, state archt., training school and classroom bldg. **$1,500,000.**

COMMERCIAL BUILDINGS

▲ **Calif., Anaheim**—DWELLINGS—Anaheim Homes, Inc., 756 S. Broadway, Los Angeles, plans by Wm. A. Bray, 962 N. LaBrea Ave., Los Angeles, 350 frame, stucco dwellings, **$3,000,000.**

▲ **Calif., Los Angeles**—HOSPITAL ADDN.—St. Vincent's Hospital, 2131 W. 3 St., plans by Austin, Field & Fry, 2311 W. 3 St., Los Angeles, 5 story, 57,000 sq. ft. rein.-con. hospital addn., **$1,500,000.**

▲ **Calif., Los Angeles**—DWELLINGS—Woodale Construction Co., 241 S. Robertson Blvd., Beverly Hills, plans by Reichl & Starkman, 250 S. Robertson Blvd., Beverly Hills, 200 frame, stucco dwellings in Van Nuys District, **$2,000,000.**

▲ **Calif., Monterey Park**—DWELLINGS—James N. Starbird & Assocs., 1166 E. 58 St., Los Angeles, plans by Wm. A. Bray, 962 N. La Brea St., Los Angeles, 151 frame, stucco dwellings, **$1,500,000.**

▲ **Calif., Norwalk**—DWELLINGS—James N. Starbird & Assocs., 1166 E. 58 St., Los Angeles, plans by Wm. A. Bray, 962 N. La Cienega Blvd., Los Angeles, 600 frame, stucco dwellings in La Mirada District, **$5,000,000.**

▲ **Colo., Denver**—RESIDENCES, etc.—Burns Realty & Trust Co., Burns Vault Bldg., 400 residences, shopping center, large industrial area, schools and church, north of Denver city limits on New Brighton Hy. **$4,500,000.**

▲ **Ind., Culver**—CLASSROOM BLDGS.—Culver Military Academy, Culver, two classroom bldgs., Eppley Hall of Science, **$1,000,000;** Cignilliat Memorial Hall, **$500,000.**

▲ **Mich., Royal Oak**—OFFICE—Michigan Life Insurance Co., 2908 E. Grand Blvd., Detroit, plans by Harley Ellington & Day, Inc., 153 E. Elizabeth St., Detroit, 4 story, brick, steel office, Woodward St. near Merrill and 13-Mile Rd., **$1,600,000.** CD 2/3/54.

▲ **Mo., Kansas City**—APARTMENT—Mirror Lake Apartments, Inc., c/o A. E. Margolin, R. A. Long Bldg., Kansas City, Mo., plans by Voskamp & Slezak, 18 E. 11 St., Kansas City, Mo., 11 story apartment, 270 units, Volker Blvd. and Oak St., **$4,000,000.**

▲ **Nev., Las Vegas**—HOTEL—Louis Lurie, c/o McAllister & Wagner, archts., 1121 S. Hill St., Los Angeles, Calif., 10-story Fremont Hotel. **$5,000,000.** Dames & Moore, 816 W. 5 St., Los Angeles, Calif., engrs. on fdns.; Brandow & Johnson and John A. Martin, 50 S. Boylston St., Los Angeles, Calif., structural engrs. CD 8/9.

▲ **N. Y., New York**—BANK, OFFICE—Bank of New York, 530 5th Ave., plans by Voorhees, Walker, Foley & Smith, 101 Park Ave., 20-story bank and office, 5th Ave., 44 and 45 Sts., **$10,000,000.**

▲ **N. Y., New York**—OFFICE—C. I. T. Financial Corp., 1 Park Ave., Zone 16, plans by Harrison & Abramovitz, 630 Fifth Ave., office and commercial bldg., Madison Ave., 59 and 60 Sts., **$8,000,000.** CD 7/15.

▲ **O., Grove City**—HOMES—Chipley Realty Co., 720 E. Broad St., Columbus, 200 homes, **$2,200,000.**

▲ **O., Maple Heights**—STORE—Sears Roebuck & Co., James T. Griffin, mgr., 8501 Carnegie Ave., Cleveland, Zone 6, branch store at Southgate Shopping Center, Libby and Warrensville Center Rds. **$4,000,000.**

▲ **Pa., Pottsville**—HIGH SCHOOL—Catholic Archdiocese of Phila., 1712 Summer St., Phila., plans by G. E. Yundt, 125 S. 6 St., Phila., parochial high school, **$1,250,000.**

▲ **Tex., Bellaire**—HIGH SCHOOL—Incarnate Word Convent, Bellaire, plans by George McHale, 3501 Buffalo Dr., Houston, Marian Co-Educational high school, **$1,250,000.**

▲ **Tex., Houston**—APARTMENT PROJ.—Centex Constr. Co., 4911 Greenville St., Dallas, 200-300 unit apartment proj. in Gulf Terrace area off Almeda-Genoa Rds. **$2,250,000.**

▲ **Tex., Houston**—OFFICE—Mancill Allen & Assocs., 1930 W. Gray St., plans by Charles Chase and Milton McGinty, 1200 Bissonnet St., 6 story bsmnt., kasota stone exterior facing office. **$1,100,000** in River Oaks Shopping Center area.

▲ **Tex., Lubbock**—MOTOR LODGE—W. B. Blankenship, Lubbock, plans by Mesa Architects, 1902 Avenue M, brick, tile, steel frame motor lodge, rein.-con. fdn., vicinity 4th St. and College Ave. **$1,500,000.**

▲ **Va., Arlington**—MOTEL TYPE BLDGS.—Hot Shoppes, Inc. 1355 Lee Hy., plans by Joseph G. Morgan, 1355 Lee Hy., Hotel Potomac Terrace, five 2- to 4-story brick, concrete, masonry back-up and partitions motel type bldgs., **$3,000,000.** Beall & LeMay, 1726 M St., N.W. Wash. D. C. consult engrs.

▲ **Wash., Tacoma**—HOUSES—S. L. Rowland, 102 S. 72 St., 200 houses, Southgate area in addn. to 200 already under way. **$2,000,000.**

▲ **Alta., Calgary**—OFFICE—Royalite Oil Co. Ltd., 58 Ave. and 104 St., Edmonton, plans by Rule, Wynn & Rule, 11422 Jasper Ave., Edmonton, 6 story steel, masonry office with provision for exten. to 12 story, **$3,000,000.**

INDUSTRIAL BUILDINGS

▲ **Ill., Rockford**—**FACTORY,** OFFICE—Elco Tool & Screw Corp., 1800 Broadway, plans by Marshall P. Munz, Empire Bldg., Rockford, 200,000 sq. ft., factory and office. **$2,000,000.**

▲ **Ky., Bowling Green**—PLANT—Detrex Corp., A. O. Thalacker, pres., 14331 Woodrow Wilson St., Detroit, Mich., 100,000 sq. ft. dry cleaning equip. mfg. plant, **$1,000,000.**

▲ **Mich., Dearborn**—PLANT OFFICE, ETC.—Ford Motor Co., Earle S. MacPherson, vice pres., 3000 Schaefer St., Dearborn, brick, steel 450,000 sq. ft. general office, Southfield and Rotunda Sts., **$7,000,000;** 550,000 sq. ft. body engineering plant at Research & Engineering Center, Oakwood St., **$6,500,000;** 385,000 sq. ft. applied and basin research plant at Ford Research and Engineering Center, Oakwood St., **$4,000,000;** 33,000 sq. ft. cafeteria, Oakwood St., **$325,000;** 24,000 sq. ft. engineering bldg. addn., at Ford Research and Engineering Center, Oakwood St., **$250,000.** CD 9/1/53.

▲ **Mich., Warren**—LABORATORY—General Motors Corp., General Motors Bldg., Detroit, plans by Argonaut Realty Div., General Motors Corp., General Motors Bldg., Detroit, research laboratory, isotope laboratory, pumphouse, substation, Mound Rd., **$2,000,000.**

▲ **N. Y., Deer Park**—PLANT—Fairchild Engine & Airplane Co., Hagerstown, Md., plant on Commack Rd. **$5,000,000.**

▲ **O., Bratenahl**—LABORATORY—Eaton Mfg. Co., 739 E. 140 St., Cleveland, Zone 10, abandoned because of zoning, research laboratory. **$1,000,000.** CD 12/18/53.

▲ **O., Euclid**—RESEARCH CENTER—Clevite Corp., 1700 St. Clair Ave., Cleveland, abandoned because of zoning, research center. **$5,000,000.** CD 11/25/53.

▲ **Tex., Houston**—PRODUCE TERMINAL EXPAN.—Houston Produce Terminal, Inc., Wayside Dr., produce terminal expans. (cold storage unit) **$2,000,000.**

▲ **Utah, Green River**—URANIUM PLANT—Consolidated Uranium Co., (Underwriter-Walter Tellier, 1 Exchange Pl., Jersey City, N. J.), 500-ton per day uranium plant in Temple Mt. Area near nere. **$6,000,000.**

▲ **Wis., Alma**—STEAM POWER PLANT ADDN.—Dairyland Power Co-op., 123 N. 4 St., La Crosse, steam power plant addn., **$8,500,000.** Vern E. Alden Co., 33 N. La Salle St., Chicago, Ill., consult. engr.

UNCLASSIFIED

▲ **Mo., Kansas City**—OFF-STREET PARKING—City, Dpt. P. Wks., City Hall, voted **$1,500,000** bonds Aug. 3, off-street parking. CD 4/10/52.

▲ **Mo., Kansas City**—STADIUM—City, Dpt. P. Wks., City Hall, voted **$2,000,000** bonds Aug. 3, public stadium. CD 9/14/51.

▲ **Mo., Kansas City**—PARK SYSTEM IMPRVS.—Jackson Co., Court House, Independence, voted **$3,000,000** bonds Aug. 3, Jackson County park sys. imprvs. Harvey A. Jones, engr. CD 6/29.

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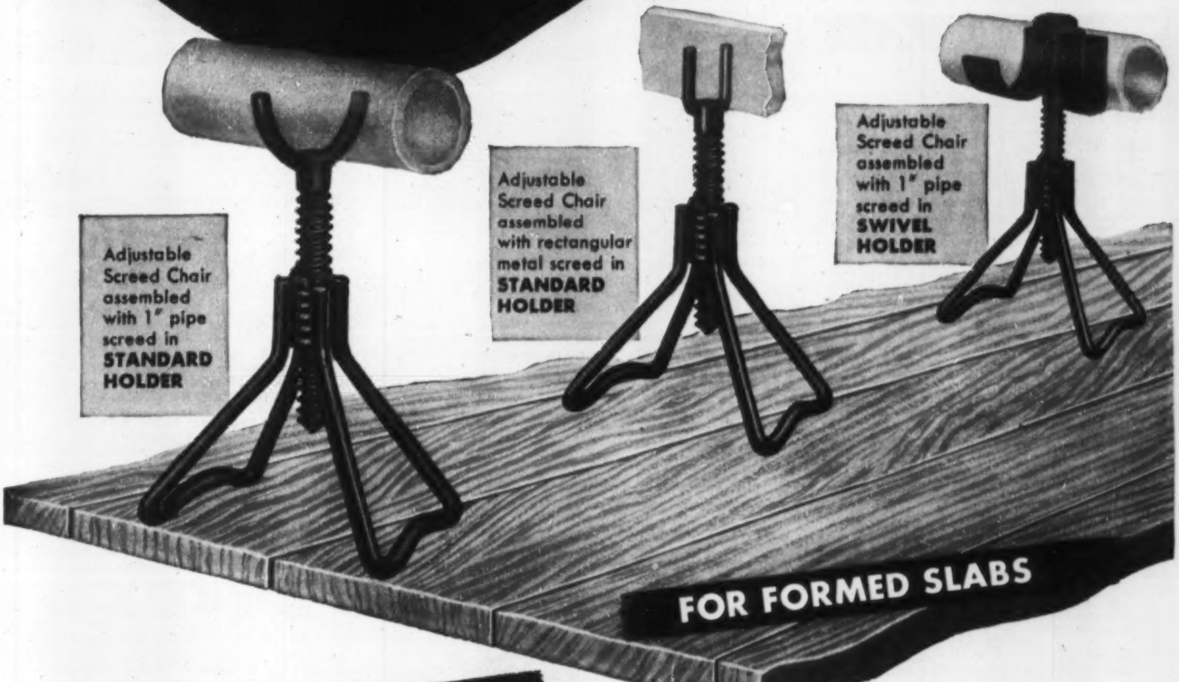
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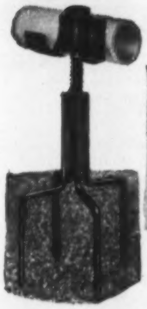

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

August 31 Massachusetts   September 1 Maine

STREETS AND ROADS

August 31, September 8, 14 Massachusetts

† **Mass., Chicopee Falls**—ALERT HANGAR—BA On Or About 9/17—U. S. Eng., 857 Commonwealth Ave., Boston, Zone 15, alert hangar addns., Westover Air Force Base, ENG-19-016-55-14, $400,000-$600,000. Plans deposit $25.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., State House, Augusta, **Bridge Constr. Corp.**, 341 Water St., Augusta, Me. CA **$629,347.** b. conc. road F. A. Secondary Proj. S-0326 (6), Mapleton-Castle Hill. CD 8/11, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

August 31 Maryland   September 2, 7 New Jersey

STREETS AND ROADS

August 31 Maryland   September 1 Delaware

N. Y., Fallsburgh—BA 9/23—Woodbourne Water Dist., Town Clerk's Office, South Fallsburg, Contract I, test wells, 2 permanent wells with pumps and motors; Contract II, 2 well houses, standpipe foundation, electrical work; Contract III, 350,000 gal. steel standpipe; Contract IV, 23,000 lin. ft. 6- to 10-in. mains, with hydrants, valves and house services. Plans deposit $10. Alexander Potter Assocs., 50 Church St., New York, Zone 7, consult. engrs., adv. ENR 8/26. CD 5/13/46.

BIDS ASKED—BUILDINGS

Pa., Harmarville—LABORATORY, etc.—BA 8/30—Gulf Oil Research & Development Corp., Harmarville, 1 story, 60x90 ft., and 1 and 2 story, bsmnt., 160x92x86 ft. Laboratory and Office, No. 20. Fuel Blending Bldg. and Boiler House, $500,000. P. L. R. Hogner, c/o owner, co. archt. CD 4/22/48.

Pa., Saltsburg—SCHOOL—BA 9/1—Saltsburg Joint School Dist., Saltsburg, 1 story, steel, brick, block Joint Grade School, near Slicksville, $454,418. Sorber & Hoone, First Natl. Bank, Greensburg, archts. CD 7/22.

▲ **N. Y., Brooklyn**—HOUSING—BA 9/14—New York City Housing Auth., 299 Broadway, New York, Zone 7, (1) foundations and general construction (2) heating and ventilating (3) electrical work and (4) plumbing for Sumner Houses (Proj. No. NYS-58-4) Section (1), incl. Bldgs. No. 1 to 7 inclusive located in area bounded generally by Park Ave., Broadway, Lewis Ave., Myrtle Ave. and Sumner Ave., Brooklyn Boro. Plans deposit $75. CD 2/7/52.

Pa., Sharon—SCHOOL—BA 9/15—Sharon School Auth., Sharon, 1 story, 31,000 sq. ft., brick Fisher Hill Grade School. $400,000. W. G. Eckles Co., 719 Lawrence Saving Trust Bldg., New Castle, archt. CD 3/17.

Pa., Schwenksville—SCHOOL—BA 9/16—Schwenksville Consolidated School, school addn. $530,000. Robert McLaughlin, 1411 Walnut St., Phila., engr. John S. Carver, 2112 Spruce St., Phila., archt.

▲ **Pa., Phila.**—APARTMENT, etc.—BA 9/24—Denny Building Corp., 2627 Fidelity Bldg., Phila., 800-unit apartment and parking area, and commercial businesses, incl. stores, $9,000,000. Philip Birnbaum, 12 E. 48 St., New York, N. Y., archt. Samuel I. Oshiver, 1704 Walnut St., Phila., assoc. archt.

▲ **Del., Newark**—SHOPPING CENTER, etc.—Bids Asked—J. Eldridge Moxley & Son, archts., 12 E. 24 St., Baltimore, Md., shopping center and parking area, for Pomeroy Realty, Inc., Walker Dunlop, Inc., Att. Charles Hoover, 1200 15 St., N.W., Wash., D. C. $1,000,000. CD 8/3/53.

Pa., Phila.—OFFICE—Bids Asked—Sylvania Electric Products Co., 460 Market St., Williamsport, office, $500,000. Paul Van Wertz, c/o owner, engr.

SOON LETS CONTRACT—BUILDINGS

▲ **N. J., Camden**—DEPARTMENT STORE—Lit Brothers, 8 and Market Sts., Phila., Pa., soon lets contract department store, $2,000,000. Thalheimer & Weitz, 1325 Walnut St., Phila., Pa., archts. CD 12/1.

▲ **Pa., Greensburg**—OFFICE, WAREHOUSE, etc. West Penn Power Co., 14 Wood St., Pittsburgh, soon lets contract 4 story, 212x375 ft. steel, brick, block office, warehouse and garage. $5,000,000. Hoffman & Crumpt, 700 Century Bldg., Pittsburgh, archts. CD 11/18.

Pa., Phila.—SUPERMARKET—Davids Supowitz & Shander Berger, archts., 246 S. 15 St., Phila., Pa., soon lets contract, supermarket, 9 stores, bowling alley, offices, for City Line Center, Inc., 7616 City Line Ave., Phila., Pa. $750,000. CD 3/31.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Dravo Corp.**, Neville Island, Pittsburgh, Pa., CA, **$1,913,250**, Cofferdams A and B, unwatering cofferdam area, near Massena, St. Lawrence Co., NEW YORK. The Power Authority of the State of New York, 270 Broadway, New York 7, N. Y. Bids Aug. 6. CD 8/9, under LB.

Square Constr. Co., 115 S. Haven St., Baltimore, Md., CA, **$839,490.** Bids No. 2196, interceptor sewer, PHILA., PA., Dpt. Procurement City Hall, Phila., Pa. Bids July 20. CD 8/3, under LB.

▲ **McCloskey & Co.**, 1620 W. Thompson St., Phila., Pa., CA, **$3,148,511**, sedimentation basins and equip. at Torresdale Filter Plant. Bids No. 2176 PHILA., PA. Procurement Dpt., City Hall Annex, Phila., Pa. CD 8/3, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Seltzer & Young, Inc., 1316 Moravia St., New Castle, Pa., CA, **$480,791**, 1 and 2 story, L-shaped, steel brick, block Penn St. Elementary SCHOOL, Bids Aug. 3. CD 7/15;

J. S. Simon, 731 S. Negley St., Pittsburgh, Pa., CA, **$315,351**, 1 story, 60x260 ft., 50x120 ft., steel, brick, block Northwest Grade SCHOOL, Butler Twp., BUTLER, PA. Butler Twp. School Auth., 425 N. Washington St., Butler, Pa. CD 6/24.

▲ **Trimble Co.**, 1719 Penna. Ave., Pittsburgh, Pa., CA Est. **$1,500,000**, RAILROAD CAR REPAIR BLDG., CONNELLSVILLE, PA. Baltimore & Ohio R.R. Co., K. J. Wagner, ch. engr., Baltimore and Charles Sts., Baltimore 1, Md.

Spera Constr. Co., 1719 N. Front St., Harrisburg, Pa., CA, **$382,000**, 65,000 sq. ft. shoe FACTORY, on Route 22 Bypass east of HARRISBURG, PA. Carlisle Shoe Co., 1408 Vernon St., Harrisburg, Pa. CD 6/25.

David T. Riffle, Inc., 1006 Forbes St., Pittsburgh, Pa., CA, **$500,000.** 1 story, 52x71 ft., brick, block DIAL OFFICE, MILLVALE, PA. Bell Telephone Co., 416 7 Ave., Pittsburgh, Pa. CD 7/22.

Ridley Parkview Development, 509 Lindsey St., Ridley Park, Pa., Separate Contracts, **$912,000**, RESIDENTIAL DEVELOPMENT, Perry and Michell Sts., RIDLEY PARK, PA.

▲ **Mellon Stuart Co.**, 210 E. Parkway, Pittsburgh, Pa., CA, **$5,000,000.** brick, concrete, steel, Sound LABORATORY and TEST CENTER, SHARON, PA. Westinghouse Electric Corp., P.O. Box 868, Pittsburgh, 30, Pa. CD 7/13.

▲ **Westmoreland Construction Co.**, Greensburg, Pa., CA, **$3,600,000**, 120x300 ft., brick, steel auto glass mfg. PLANT addn., SOUTH GREENSBURG, PA. Pittsburgh Plate Glass Co., Gateway Center, Pittsburgh, Pa. Bids July 26. CD 7/28.

Dick Corp., Route 51, Large, Pa., CA, **$700,000**, 2 story, bsmnt., steel TELEPHONE OFFICE, WASHINGTON, PA. Bell Telephone Co., 416 7 Ave., Pittsburgh, Pa. Bids June 29. CD 6/24.

Kirby & McGuire, Inc., 2518 Greenmount Ave., Baltimore, Md., LB **$849,263.** concrete, steel, masonry HOSPITAL, GUARD HOUSE, truck gates, Maryland Penitentiary, BALTIMORE, MD. State, Dpt. P. Imprvts., 506 Park Ave., Baltimore 1, Md. Bids Aug. 12. CD 7/26.

▲ **Michnick-Di-Maio**, 1520 K St. N. W., Wash., D. C. CA Est. **$1,700,000.** 5 story, granite, limestone OFFICE, Georgia Ave. and Cameron St., SILVER SPRING, MD. Cameron Building Corp., 934 Ellsworth Dr., Silver Spring, Md. CD 2/11.

Syndicated Constr. Corp., 300 Southern Ave. S. E. Wash., D. C. Owner Builds. **$800,000.** one hundred 1 story, 39x40 ft. frame HOUSES, Fort Foote, UPPER MARLBORO, MD. Earl Von Reichenbach 1219 Good Hope Rd. S. E., Wash., D. C., archt.

Magazine Bros., Woodward Bldg., Wash., D. C. CA **$918,000.** one hundred and two 2 story, 18x33 ft., brick HOUSES, Oxon Run Hills, UPPER MARLBORO, MD. Morris Miller, Inc., 8007 Eastern Spring, Md. CD 4/25/52.

Dan Ostrow Constr. Co., 1422 K St. N. W., Wash., D. C. Owner Builds. **$900,000.** ninety 2 story, 26x37 ft., brick HOUSES, WHEATON, MD. Jack C. Cohen, 8416 Georgia Ave., Silver Spring, Md., archt.

▲ **George Hyman Constr. Co.**, 1010 Vermont Ave. N. W., Wash., D. C., LB, **$1,771,000.** JUNIOR HIGH SCHOOL, WASH., D. C. D. C. Govt., Dir. Bldgs. & Grounds, 499 Pa. Ave. N. W., Wash, D. C. Bids Aug. 17. CD 7/22.

Rupert Constr. Co., 3400 Lancaster Ave., Wilmington, Del., CA **$750,000**, River Road SCHOOL addn., WILMINGTON, DEL. Mount Pleasant School Dist., Duncan Rd. and Phila. Pike, Wilmington, Del. Bids July 7. CD 7/16, under LB.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

September 3 Kentucky   September 7 North Carolina

Louisiana—GAS LATERAL LINES—Bids Asked—Transcontinental Gas Pipe Line Corp., 3100 Travis St., Houston, Tex., 10 mi. gas lateral lines, Creole, $275,000; 15 mi. lateral gas lines, Lake Charles, $365,000; metering station, Lake Charles, $100,000. CD 5/28.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **R. B. Tyler Co.**, 1446 Levering St., Louisville, Ky. CA **$608,425.** asphalt Upper Bank paving at several localities on banks of Mississippi River, DA-22-052, ENG-4698, LOUISIANA, MISSISSIPPI and ARKANSAS. U. S. Eng., P.O. Box 60, Vicksburg, Miss. CD 7/29, under LB.

KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort,

Harry O. Wyse, Versailles Rd., Lexington, Ky. LB **$709,759.** bridge on U.S. 68 over Kentucky River replacing fallen Brooklyn Bridge, 13 mi. north of Harrodsburg on Lexington-Harrodsburg Rd., Mercer and Jessamine Counties. **Bids Aug. 13. CD 7/29**, under Streets and Roads.

▲ **KENTUCKY**—Commonwealth of Ky., Dpt. Hys., Frankfort,

Curtis Cantrill Contractor, Lexington, Ky. LB **$77,352.** bit. surf. Class C-1 limestone aggregate 9.69 mi. various roads, Pike Co.;

Lyons & Breeden, Rogersville, Tenn. LB **$265,572.** high type surf. 0.914 mi. Madisonville-Henderson Rd., F 41 (13), SP 54-20, Hopkins Co.;

MaGo Constr. Co., Bardstown, Ky. LB **$128,300.** bit. macad. surf. penetration type Class D 7.252 mi. Leitchfield-Fordsville Rd., S 462 (5), SP 43-255, Grayson Co.;

Greer Bros. & Young, London, Ky. LB **$317,834.** traffic bound limestone 6.09 mi. Pearl-Brown Hill-Ky. 92 Rd., S 526 (1), RS 7-884, RS 118-150, Bell and Whitley Counties;

R. R. Dawson Bridge Co., Bloomfield, Ky. LB **$99,361.** reconstr., traffic bound limestone 6.667 mi. Ky 84-St. Joseph-Jessietown Rd., RS 78-562, Marion Co.;

T. C. Young Constr. Co., Whitesburg, Ky. LB **$75,635.** reconstr., traffic bound limestone 10.046 mi. Bottom Rd.-Williams Creek Rd., SP 104-638, SP 104-658, Russell Co.;

R. B. Tyler Co., 1446 Levering St., Louisville, Ky. and **Breslin Constr. Co., Inc.**, 1433 S. Preston St., Louisville, Ky. LB **$155,145.** reconstr., bit. surf. Class I 2.575 mi., County Belt Line Rd., RS 56-468, Jefferson Co.;

Licking River Limestone Co., West Liberty, Ky. LB **$109,216.** traffic bound limestone 3.504 mi. Stricklett-Triplett Rd., S 148 (4), RS 68-234, Lewis Co.;

Smith Constr. Co., Huntington, W. Va. LB **$664,772.** traffic bound slab, metal type crib wall, 12 in. steel piles 6.868 mi. Louisa-Catlettsburg Rd. (Ky 3), F 537 (2), SP 64-113, Lawrence Co. Bids Aug. 13. CD 7/29.

Coleman Trainor & Co., Box 1477, Huntington, W. Va. CA **$365,000.** water sys., RADCLIFFE, KY. Hardin Co., Water Dist. No. 1, Radcliffe, Ky. Awarded Aug. 10.

BUILDINGS

LOW BIDS AND CONTRACTS

J. Kennon Perrin, West Broad St., Richmond, Va. CA **$893,336.** KITCHEN-CAFETERIA BLDG., WILLIAMSBURG, VA. State Hospital Bd., 309 N. 12 St., Richmond, Va. CD 7/15, under LB.

▲ **Chemical Constr. Co.**, 488 Madison Ave., New York, N. Y., CA, **$3,000,000** design and construct Ammonia PLANT and OFFICE, NATRIUM, W. VA. Columbia Southern Chemical Co., Div. Pittsburgh Plate Glass Co., Grant **Bldg., Pittsburgh, Pa.**

▲ **Gaines Constr. Co.**, 15450 Northwest 27 Ave., Miami, Fla., CA. Est. **$8,000,000**, 10,000 RESIDENCES, at Coral City, 23 mi. from MIAMI, FLA. **Ralph R. Stolkin**, c/o contractor.

Dahlem Constr. Co., Baxter Ave., Louisville, Ky. CA **$500,000.** SHOPPING CENTER, 20 stores, Taylorsville Rd. and Hikes Lane, LOUISVILLE, KY. R. F. McMahon, Taylorsville Rd., **Louisville, Ky.**

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

STREETS AND ROADS

September 9 New York

▲ **Ill., Chicago**—BA 9/1—City, City Hall, Western Ave. Pumping Station Reservoir, $2,000,000. CD 8/18.

▲ **Ill., Jacksonville**—BA 9/2—City, City Hall, constr. 23 mi. raw water transmission line, 24 and 30 in. diam., horizontal water collector, pumping station and appurtenant equip. **Plans deposit $75.** Casler & Stapleton, 313 W. State St., consult. engrs. CD 6/1.

▲ **Ill., Streator**—BA 9/15—City, City Hall, sewage treatment plant and interceptor **sewers**, $1,000,000. Warren & VanPraag, 253 Park St., Decatur, engrs. CD 2/24.

BIDS ASKED—BUILDINGS

▲ **Mich., Dearborn**—PLANT—Bids Asked—Ford Motor Co., Earle MacPherson, vice pres. in charge of Engineering, 3000 Schaefer St., substructure, 550,000 sq. ft. body engineering plant, $6,500,000. Voorhees, Walker, Foley & Smith, 101 Park Ave., New York, N. Y., archts. CD 8/13.

SOON LETS CONTRACTS—BUILDINGS

▲ **Ill., Niles**—SCHOOL—Congregation of Holy Cross, 1100 Forest Ave., Evanston, soon lets contract 1 story Notre Dame Catholic High School, $2,500,000. Belli & Belli, 8 S. Dearborn St., Chicago, Zone 3, archts. CD 3/15.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—State Hy. Dpt., Columbus, Zone 15,
The DeSalvo Constr. Co., 1686 Summit Rd., Cincinnati, O. CA **$1,145,600**, est. $1,242,600. Type T-71 and structure 2.695 mi., U. S. R. 60, sections (8.21-10.47) U-1100 (1), Hamilton Co.;
John R. Jurgensen Co., P. O. Box 254, Newtown, O. CA **$528,938**. Type T-35 and structure 4.018 mi. U. S. R. 22 sections (13.15-16.13) (17.44) 0.00, Hamilton and Warren Counties. CD 8/11, under LB.

† **U. S. Eng.**, New Federal Bldg., Toledo, O. Own Forces. **$275,000**. dredge 10 mi. ship channel in Toledo Harbor to maintain depth of 25 ft. involving about 700,000 cu. yd. silt, Toledo, OHIO.

▲ **ILLINOIS**—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield,
Thos. M. Madden Co., 4610 Van Buren St., Chicago 44, Ill., CA **$1,480,453**, c. conc. 0.76 mi. F. A. No. 131, Congress Street Expressway, Cook Co.; CA **$965,673**, c. conc. 0.51 mi. F. A. Rte. 131 (Congress St. Expressway), Cook Co. Bids Aug. 3, awarded Aug. 16. CD 8/9, under LB.

† **Keno Constr. Co.**, 3080 Skokie Hy., Highland Park, Ill., CA **$546,865**, two air defense installations, near Chicago and Winnetka, Ill. along Skokie Hy. and other near Gary Airport, Ind., ILLINOIS and INDIANA. U. S. Eng., Merchandise Mart, Chicago 54, Ill. Bids July 27, awarded Aug. 9.

▲ **City, Dpt. Purchases & Supplies**, 735 Randolph St., Detroit, Mich. rejected bids June 8, 40,000-50,000 kw reheat hydrogen cooled turbine generator for Public Lighting Dpt., DETROIT, MICH. CA **$1,895,700**. Will re-advertise. CD 7/7, under CA.

BUILDINGS

LOW BIDS AND CONTRACTS

John C. Ruhlin Constr. Co., 1024 Home St., Akron, O. LB general contract;
Spohn Heating & Ventilating Co., 872 N. Main St., Akron, O. LB plumbing, heating contracts;
John P. Novatny Electric Co., 165 E. Thornton St., Akron O. LB electrical contract, 4 story ARTS AND SCIENCES BLDG., Brown and Buchtel Ave., AKRON, O. Total est **$885,149**. Bd. Dir. University of Akron, 302 E. Buchtel Ave., Akron, O. CD 7/8.

Wm. R. Goss Co., 8316 S. Ellis Ave., Chicago, Ill., CA **$500,000**, CHURCH, CHICAGO, ILL. St. Hilary Parish, 5645 N. California St., Chicago, Ill. Bids July 13, awarded Aug. 6. CD 7/8.

▲ **Harms-Glenview Homes Corp.**, c/o Bertrand Goldberg, archt., 721 N. Michigan Ave., Chicago 11, Ill., Own Forces, **$2,300,000**, 150 HOMES, near Wilmette and Harms Rds., GLENVIEW, ILL.

▲ **Chas. L. McConnell Constr. Co.**, 10601 S. Artesian St., Chicago, Ill. Own Forces, **$1,700,000**. 155 HOMES, near PARK FOREST, ILL.

Precour Constr. Co., N. Bowen St., Oshkosh, Wis., LB, **$558,379**, general contract, HEALTH and PHYSCIAL EDUCATION BLDG., OSHKOSH, WIS. Bd. Regents of State Colleges, Madison, Wis. Bids Aug. 11. CD 7/9.

Bert Gordon Co., 18906 Schaefer St., Detroit 35, Mich. Owner Builds. **$500,000**. 40 brick HOMES, Elmsford north of 14 Mile and east of Main St., CLAWSON, MICH.

▲ **Koloff Builders, Inc.**, Ben Koloff, 8614 LaSalle St., Detroit 6, Mich. Owner Builds. **$1,125,000**. 110 face brick ranch HOMES, Middlebell Rd. and Cherryhill, LIVONIA, MICH.

▲ **Northwood Center, Inc.**, Eugene Sloan, 16856 Schaefer St., Detroit, Mich. Owner Builds. **$5,000,000**. SHOPPING CENTER, 13 Mile and Woodward Ave., ROYAL OAK, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

STREETS AND ROADS

September 2 Kansas

BIDS ASKED—BUILDINGS

▲ **Mo., Kansas City**—HOTEL—BA About 10/1—Trianon Hotel Co., Barney L. Allis, pres., 12 and Baltimore Sts., 12 or 17 story Hotel Muehlebach addn., $4,000,000. Plans deposit $25, Neville, Sharp & Simon, 25 E. 12 St., Kansas City, Mo., archts. CD 4/22/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **McCarthy-Improvement Co.**, 602 Kahl Bldg., Davenport, Ia., CA, **$1,222,024**, Contract No. 2, substructure;
Allied Structural Steel Companies, Clinton, Ia., CA, **$2,684,848**, Contract No. 3, superstructure; for two-lane highway bridge and approaches over Mississippi River between City of Clinton, Ia. and East Clinton, Ill., IOWA and ILLINOIS. City of Clinton Bridge Comn., P.O. Box 70, Clinton, Ia. Bids May 6. CD 5/21, under LB.

▲† **Donovan Constr. Co.**, 1725 Carroll Ave., St. Paul, Minn., and **Foley Bros.**, 900 New York Bldg., St. Paul, Minn. LB **$4,010,624**. Powerhouse superstructure, switchyard and transformer yard at Gavins Point Reservoir Project, near Yankton. Inv. 25-066-54-158, SOUTH

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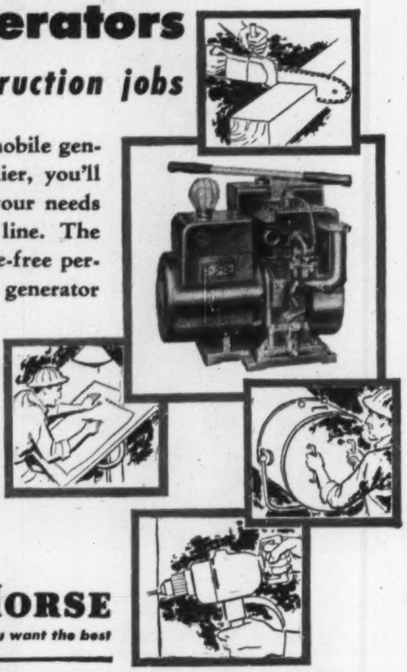

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DAKOTA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Aug. 17. CD 6/15.

NEBRASKA—State Dpt. Roads & Irrigation, Lincoln, **M. M. Lippincott**, Hastings, Neb. CA **$226,995**. grav. detour, subgrade, prep. armor, bit. stabilized b. conc. Ruskin west, FA-F-164, Nuckells Co. Bids July 29. CD 7/19.

Chicago, Burlington & Quincy R.R. Co., H. A. Aalberg, ch. engr., 547 W. Jackson Blvd., Chicago, Ill. Owner Builds. **$950,000**. remove 4 mi. track and rebuild same farther from Offutt Air Force Base, near OMAHA, NEB.

A. W. Soderberg Constr. Co., 910 E. Indianapolis St., Wichita, Kan. CA Est. **$750,000**. television station, WICHITA, KAN. KAKE-TV, 13 and West Sts., WICHITA, KAN. W. I. Fisher, 301 S. Main St., Wichita, Kan., archt. CD 7/23/52.

▲ **Lone Star Gas Co.**, 1915 Wood St., Dallas, Tex., Own Forces, **$500,000**, some gas distr. lines, Dallas, Dallas Co.; laying gas transmission lines in southern part of Dallas Co.; **$350,000**, addnl. unit of gas distr. lines, Fort Worth, Tarrant Co.; **$375,000**, addnl. gas transmission lines, Fort Worth, Tarrant Co., TEXAS. Grand total $1,975,000. CD 6/19/50.

† **Cleal T. Watts**, Rockdale, Miss., LB, **$250,850**, est. $447,545, Sump D, excavation and strengthening portion of W. Levee of Dallas floodway, CIVENG-41-443-55-3, TEXAS, U. S. Eng., 100 W. Vickery St., Fort Worth, Tex. Bids Aug. 12. CD 7/8.

Fisher Constr. Co., 4711 Greeley St., Houston, Tex., LB, **$513,000**, incinerator at the Dump on Holmes Rd., HOUSTON, TEX. City, City Hall, 900 Brazos St., Houston, Tex. Bids Aug. 10.

Kenyon Dredging Co., Inc., Box 607, Port Allen, La., CA **$508,525**, Projects 2 and 3, barge canal with turning basin and barge docking facilities project, LONG MOTT, TEX. West Side Calhoun County Navigation District, T. A. McDonald, chn., Long Mott, Tex. Bids June 28. CD 7/7, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Hutter Constr. Co.**, Fond du Lac, Wis. CA **$1,250,000**. CA general contract, 69x195 ft. CATHEDRAL, 80x97 ft. RECTORY, Fourth St. and Wallace Ave., DULUTH, MINN. Diocese of Duluth, 215 W. Fourth St., Duluth, Minn. Maguolo & Quick, 1004 Marquette Ave., Minneapolis, Minn., archts.

▲ **Miller-Davis Co.**, 1029 Portage St., Kalamazoo, Mich. CA **$1,000,000**. 1 story, 222x290 ft. PLANT to mfg. paper milk containers on Hy. 55 near Minneapolis, Northfield and Southern Ry., west of Hy. 100, GOLDEN VALLEY (P.O. MINNEAPOLIS), MINN. International Paper Co., 1029 Portage St., Kalamazoo, Mich.

J. Leck Co., 211 S. 11 St., Minneapolis, Minn. CA Est. **$400,000**. 3 story, 98x110 ft. STORE, MINNEAPOLIS, MINN. W. T. Grant Co., 604 Nicollet Ave., Minneapolis, Minn. Bids July 16. CD 6/30.

▲ **Williams & Burrows, Inc.**, Belmont, Calif. CA Est. **$1,500,000**. 150,000 sq. ft. Industrial PLANT, Funstone Rd., KANSAS CITY, KAN. Parr-Richmond Industrial Corp., 1 Drumm St., San Francisco, Calif. August Waegemann, 821 Market St., San Francisco, Calif., archt. Koch Refrigerators, Inc., 14 and Gentry Sts., North Kansas City, Mo., lessee.

Harmon Constr. Co., 100 S. Indiana St., Oklahoma City, Okla. CA **$706,800**. general contract PSYCHIATRY BLDG. at University of Kansas Medical Center, KANSAS CITY, KAN. University of Kansas, Bd. Regents, Topeka, Kan. CD 7/29, under LB.

▲ **Cowdin Brothers**, 411 S. Haskell St., Dallas, Tex., CA, **$1,000,000**, OFFICE, DALLAS, TEX. Oil Center Products, 5647 Milton St., Dallas, Tex. J. N. McCammon, Southland Annex Bldg., Dallas, Tex., archt. CD 8/17.

Don Elliott, Box 455, Sherman, Tex., CA, **$974,850** Jno. H. Hood Junior High SCHOOL, DALLAS, TEX. Dallas Independent School Dist., 3700 Ross St., Dallas, Tex. Bids Aug. 3. CD 8/18, under LB.

Don Elliott, Box 455, Sherman, Tex., LB, **$974,850**, Jno B. Hood JUNIOR HIGH SCHOOL, DALLAS, TEX. Dallas Independent School Dist., 3700 Ross St., Dallas, Tex. Bids Aug. 3. CD 7/1.

▲ **Max Tidmore Constr. Co.**, 1902 Ave. M., Lubbock, Tex., CA **$1,300,000**, brick, tile MOTOR LODGE, LUBBOCK, TEX. W. B. Blankenship, Lubbock, Tex. CD 8/11.

▲ **Gerald H. Phipps, Inc.**, Box 2068, Denver, Colo., LB, **$1,467,695**, general contract;

Johnson & Davis, 2235 Arapahoe St., Denver, Colo., LB, **$311,783**, plumbing and heating, 1 and 2 story L-shaped HIGH SCHOOL, AURORA, COLO. School Dist. No. 28-J, Adams and Arapahoe Counties Consolidated Dist., 1255 Denton St., Aurora, Colo. Bids July 22. CD 7/9.

▲ **Mead & Mount Constr. Co.**, 240 Railway Exchange Bldg., Denver, Colo., CA, **$1,587,000**, 6 story, 100x200 ft., two below grade, public LIBRARY, 2 story circular north wing with 350-seat auditorium in bsmnt., complete remodeling existing 100x150 ft. GARAGE on W. as one story annex., DENVER, COLO. City, Library Comn., Colfax and Bannock Sts., Denver, Colo. Bids June 16, awarded July 16. (**Correction—contractors.**) CD 6/29, under CA.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES
September 10 California

STREETS AND ROADS
September 8, 10 California

Calif., Los Angeles—BA 9/22—Los Angeles County Sanitation Dist. 2, 2020 Beverly Blvd., Section 1, 14,850 ft. 63- to 72-in. pipe, Joint Outfall "D" Trunk Sewer 1 and 2, Torrance, $500,000 A. M. Rawn, c/o owner, engr.

BIDS ASKED—BUILDINGS

Calif., Los Angeles—SCHOOL—BA 9/2—Los Angeles Bd. Educ., 1425 S. San Pedro St., Burbank Blvd. School, Van Nuys District, $360,000. Martin Snell, 8321 Cedros St., archt. CD 9/24.

▲ **Calif., Los Angeles**—HIGH SCHOOL—BA 9/17—Los Angeles Bd. Educ., 1425 S. San Pedro St., Los Angeles, Westchester High School, $4,000,000. A. C. Zimmerman, 2439 Hyperion Ave., Los Angeles, archt. CD 6/13/52.

† **Wash., Auburn**—MAINTENANCE, etc.—BA 9/20—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, 1 story, 121x234 ft., rein.-con. motor maintenance and spray paint bldg., Auburn General Depot, ENG-45-108-55-28. CD 1/7/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Davis & Butler, Dooly Bldg., Salt Lake City, Utah, CA, **$721,652**, est. $1,000,000 purification water plant, below Pineview Dam, OGDEN, UTAH. City, City-County Bldg., Ogden, Utah. Bids Aug. 12. Templeton & Link, 500 Dooly Bldg., Salt Lake City, engrs. CD 7/8.

▲† **Morrison-Knudsen Co., Inc.**, 319 Broadway, Boise, Idaho, LB, **$1,087,444**, est. $1,100,000 altering Drydock Puget Sound Naval Shipyard, NOY 84740, BREMERTON, WASH. P. Wks. Office, Thirteenth Naval Dist., 1611 W. Wheeler St., Seattle, Wash. Bids Aug 17. CD 7/15.

OREGON—State Hy. Comn., Highway Bldg., Salem,

Porter W. Yett, 6500 N. E. Ainsworth St., Portland, Ore. CA **$848,165**. paving 6.63 mi. Crosby Rd.-Concomley Rd. unit, Willamette River-Hayesville section, Portland-Salem Expressway, FAP BFI 324 (10), Marion Co.;

Warren Northwest, Inc., 9860 N. E. Hancock St., Portland, Ore. CA **$167,614**. paving 10 mi. Idaho-Oregon-Nevada Hy., FAP FLH 3 (14), Malheur Co. Bids Aug. 10. CD 8/5.

† **Clyde W. Wood & Sons, Inc.**, 6900 Tujunga Ave., Los Angeles, Calif., CA, **$513,500**, est. $775,000 addnl. rock protection Los Angeles River, Victory to Los Feliz Blvds., Los Angeles Co., CIVENG-04-353-55-1, CALIFORNIA, U. S. Eng. 751 S. Figueroa St., Los Angeles, Calif. Bids Aug. 5, awarded Aug. 13. CD 8/16 under LB.

▲ **Guy F. Atkinson Co.**, Box 259, Long Beach, Calif., LB **$1,171,384**, constr. J. H. Davies Bridge (East Second St. Bridge) over Marine Stadium LONG BEACH, CALIF. City, City Hall, Long Beach, Calif. Bids Aug. 13.

O. K., Mittry & Sons, 15905 S. Broadway, Gardena, Calif., LB, **$359,929**, Maddock and Bradbury Debris Basins, channels, appurtenant works, Duarte, LOS ANGELES, CALIF. Los Angeles Co. Flood ontrol District, 2250 Alcazar St., Los Angeles, Calif. Bids Aug. 13. CD 7/28.

BUILDINGS

LOW BIDS AND CONTRACTS

Hadley-Cherry, Inc., 335 N. La Cienega Blvd., Los Angeles, Calif. Owner Builds, **$729,400** 100 frame, stucco DWELLINGS, Edenfield, Fenimore, and Ghent Sts. AZUSA, CALIF. Roland Russell, 621 S. Hope St., Los Angeles, Calif., archt.

Devon Constr. Co., 739 N. Highland Ave., Los Angeles, Calif., Owner Builds, **$955,600**, 92 frame, stucco DWELLINGS, San Ardo and San Crisobal Drives, BELLFLOWER, CALIF.

Markdale Homes, Inc., 1763 E. 41 St., Los Angeles, Calif. Owner Builds, **$588,000**, 60 frame, stucco DWELLINGS, Aegean and Beatty Sts., BELLFLOWER, CALIF.

Koppe Bldg. Co., 1763 E. 41 St., Los Angeles, Calif., Owner Builds, **$460,600**, 47 frame, stucco DWELLINGS, Aegean and Allards Sts., etc., BELLFLOWER, CALIF.

Arrow Constr. Co., 15127 Crenshaw Blvd., Los Angeles, Calif., Owner Builds, **$560,840**, 63 frame, stucco DWELLINGS, Lark Ellen, Greenshaven Ave., COVINA, CALIF.

Harris Constr. Co., P. O. Box 109, Fresno, Calif., LB, **$747,606** Bullard Junior High SCHOOL, Barstow and Palm Sts. FRESNO, CALIF. Bullard Unified School Dist., Fresno, Calif. Bids Aug. 10.

M. J. Brock & Sons, Inc., 2894 Rowana Ave., Los Angeles, Calif., LB, **$508,800**, est. $360,000 multi-purpose bldgs. at Apperson, Glenwood, Strathern and Telfair Schools, LOS ANGELES, CALIF. Los Angeles Bd. Educ., 1425 S. San Pedro St., Los Angeles, Calif. Bids Aug. 11. CD 2/1.

▲ **Wells P. Goodenough, Inc.**, 49 Wells Ave., Palo Alto, Calif., CA, **$2,689,907**, rein.-con. men's DORMTORY, DINING ROOM, KITCHEN and LOUNGE, PALO ALTO, CALIF. Stanford University, Palo Alto, Calif. Bids Aug. 5. CD 8/16, under LB.

J. C. Boespflug Constr. Co., 605 S. Lucas St., Los Angeles, Calif, LB, **$940,000**, North Torrance High SCHOOL, TORRANCE, CALIF. Torrance Unified School Dist, 2335 Plaza Del Amo, Torrance, Calif. Bids Aug. 16. CD 8/9.

Property Management Corp., 15502 Crenshaw Blvd., Gardena, Calif., CA, **$405,340**, 38 frame, stucco DWELLINGS, Arlington, Daphne, Spinning Aves., TORRANCE, CALIF. Rolling Hills Development Co., 15502 Crenshaw Blvd., Gardena, Calif.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

Ont., Ottawa—BA 9/1—Dpt. P. Wks., Hunter Bldg., Ottawa, asph. pavements, curbs, sidewalks (concrete and asphalt), topsoil, Tunny's Pasture Development. $750,000. Plans deposit $10. E. A. Gardner, c/o owner, archt.

Ont., North Bay—HANGAR, etc.—BA 9/9—Defence Constr. Ltd., 56 Lyon St., Ottawa, 2 hangars addns., modifications R.C.A.F. Station. $300,000. Plans deposit $100.

BIDS ASKED—BUILDINGS

Que., Valcartier—TRAINING, etc.—BA 9/8—Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont., lecture training bldg. 40-vehicle garage and guard house Army Station. $525,000. Plans deposit $100.

SOON LETS CONTRACT—BUILDINGS

Ont., Mount Dennis—FACTORY—Ferranti Electric Ltd., Mount Dennis, soon lets contract, 1 story, 180x430 ft., concrete, steel transformer factory in suburban Toronto, $500,000. Byam, Armer, MacKay & Macfarlane, 2142 Bloor St. W., Toronto, engrs.

Ont., Toronto—APARTMENT—J. Feinberg, 30 Wellington St. W., soon lets contract, apartment, 95 Avenue Rd. $500,000. W. Shulman, 467 Spadina Ave., archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Central Mortgage & Housing Corp.**, 400 Kensington Bldg., Winnipeg, Man., rejected bids July 6, 300 dwellings at R.C.A.F. Station, WINNIPEG, MAN. Est. **$2,500,000**. CD 6/21.

Foundation Maritime Ltd., 135 Lower Water St., Halifax, N. S., LB, **$549,724**, wharf imprvs. at Her Majesty Canadian Dockyard, HALIFAX, N. S. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. A. A. Anderson, c/o owner, engr.

B. Perini & Sons Canada Ltd., 49 Jackes Ave., Toronto, Ont., CA, **$883,561**, exten. Eglinton Ave. East, 1.9 mi. from Dun Mills Rd. to Victoria Park Ave., TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Awarded Aug. 9. CD 8/11, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Central Mortgage & Housing Corp.**, 1032 Gottingen St., Halifax N. S., rejected bids, 200 concrete, brick DWELLINGS, HALIFAX, N. S. **$1,800,000**. Project cancelled. CD 5/24.

Central Mortgage & Housing Corp., 40 E. Eglinton Ave. E., Toronto, Ont., rejected bids June 3, 75-unit DWELLINGS for armed forces personnel, AYLMER, ONT. Ext. **$700,000**. CD 5/18.

Principal Investments Ltd., 67 West Richmond St., Toronto, Ont., Own Forces, **$500,000**, 350 ft. frontage SHOPPING CENTER, and 600-car parking space, KITCHENER, ONT. CD 6/22.

Central Mortgage & Housing Corp., 40 E. Eglinton Ave., E., Toronto, Ont., rejected bids, 100 DWELLINGS, LONDON, ONT. Est. **$900,000**. CD 5/11.

M. Sullivan & Son Ltd., 234 Elgin St., Arnprior, Ont. CA, **$400,000**, COLD STORAGE BLDG., WINCHESTER, ONT. Ontario Cheese Producers, 294 Front St., Belleville, Ont. Bids Aug. 10, awarded Aug. 14. CD 8/1'

▲ **Central Mortgage & Housing Corp.**, 1247 Guy St., Montreal, Que., rejected bids June 16, 112-rental HOUSING units to serve H. M. Armed Forces MONTREAL, QUE. Est. **$1,200,000**. Project cancelled. CD 5/25.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

† **ALASKA**—BA 9/14—Alaska Road Comn., Dpt. Interior, Bldg. 1961, Juneau,

330-ft. bridge over Tekanika River at Mile 30.9 at McKinley Park Hy., with six 55 ft. I-beam spans on concrete-encased steel pipe piers, Plans deposit $10. Extended date. CD 8/12.

BUILDINGS

LOW BIDS AND CONTRACTS

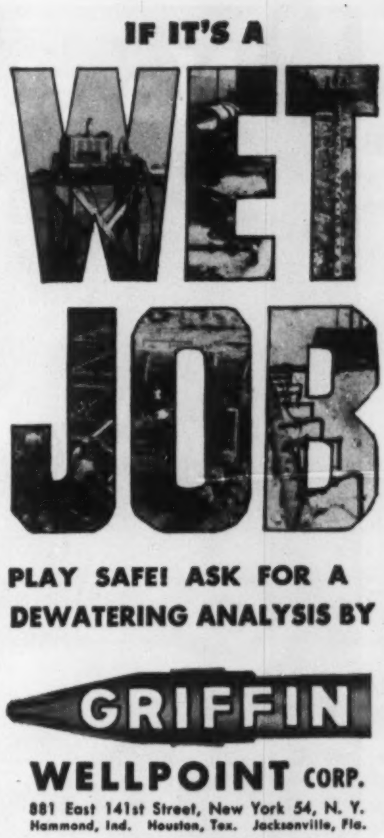
† **Schenk Constr. Co.**, Pimes Bldg., Portland. Ore., LB, **$516,601**, est. $523,335, 2 story and half bsmnt., 43x147 ft., rein.-con., masonry BOQ with mess, 1 story and half bsmnt., rein.-con., masonry combined TRAINING and ENLISTED MEN-NCO CLUB with outside utilities. ENG-95-507-55-8, KENAI, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Aug. 13. CD 7/16.

FOREIGN

BIDS ASKED—BUILDINGS

Greece—REFINERY—BA 9/20—The Greek Ministry of Coordination, II General Directorate, Athens, constr. and operation of an oil refinery, incl. supplying, installing all necessary machinery and performance of all related civil engineering work for a plant having a processing capacity of 30,000 bbl. crude oil daily, utilizing the topping and naphtha reforming method of distillation. The contractor will be expected to finance the project for a period to be determined by agreement, but not less than 8 years. A copy of the bid invitation is available for review purposes on loan from Commercial Intelligence Div., U. S. Dpt. of Commerce, Wash. 25, D. C.

(Proposal Advertisements see pp. 66 to 70)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Atomic energy law opens new construction era

Congress opened a new era last week for the construction industry—and for U. S. business as a whole. The new atomic energy law, which the President is expected to sign this week, clears the way for private business and for public agencies to enter the atomic power field.

The effect on construction won't be very large at first. To start with, there probably will be an upturn in construction of privately financed research facilities in the search for a commercially practical power generating plant fueled by nuclear material.

• **Big shifts**—Long-range, the new law portends significant shifts in power plant engineering and construction. So far, what private industry has discovered has been pretty much open for everybody else to use. Now companies can patent new developments, though for the next five years AEC can compel them to license basic discoveries and will set the royalty fees they can charge. A prominent engineer put it: "This gives engineering firms a chance to live independently of AEC."

Already, there is a brand new company studded with imposing names, in the field. Gordon Dean, former Atomic Energy Commission Chairman, will be board chairman of Nuclear Science & Engineering Corp. The new company plans to supply technical service to firms designing nuclear reactors and those working on industrial uses of radioactivity. Other top executives of the new company, including its president, Ronald A. Brightsen, come from the Atomic Power Division of Westinghouse Electric Corp. Backers of Nuclear Science are: American Metals Co., Ltd., metals smelter and refiner and investors in mining properties; and Ketay Mfg. Co., which designs and makes electronic equipment.

• **Complete Overhaul**—The bill which Congress passed last week is a complete overhaul of all existing atomic legislation. It lowers the barriers on the former government monopoly over all atomic energy activities, permits industry to develop and operate atomic power plants, and provides for freer exchange of nuclear information with friendly nations.

AEC, which has bossed the government atomic energy operations, also will keep a controlling hand on privately financed ventures in the field. Since it will continue to hold title to all nuclear fuel, its authority promises to be more far-reaching than that of other federal regulatory agencies.

AEC has wide discretion in drawing up its licensing regulations. In general, however this is the procedure the law sets up:

- Research license—Private or public groups may apply for research and development licenses to build experimental facilities looking toward a feasible power plant. It may be several months before AEC will have its detailed regulations worked out enough to receive the first application for a research license.
- Commercial license—Once a nuclear power plant is certified to be of commercial value, AEC may license it for commercial operation and issue construction permits for other applicants who are qualified to build a certified plant.
- Construction license—A construction permit, if fully adhered to by the holder, leads to a commercial license.
- Many other licenses will be required to run a commercial atomic power plant, including licenses to transport and use nuclear fuel, plant operators' permits, and licenses to sell byproduct materials.

No commercially feasible power plant is in sight right now. The predictions are that construction will start within the next year or two on privately financed plants, though of course this is just guesswork. By the end of this year private industry will have spent about $8 million of its own money on nuclear power studies. This has been under AEC contractor or sponsorship. Now with the promise of an independent role in nuclear power development and production, private companies have more incentive to step up research and development spending.

Experts see a gradual advance in non-federal research and development, though during the years immediately ahead much of the advanced work and actual construction of pilot plants will continue to be done by the federal government.

• **New construction features**—Experimental designs indicate at least three significant departures from conventional power plant construction. Since the nuclear firebox (the reactor) gives off no gaseous wastes, there will be no need for the towering smokestacks found on large coal-burning plants. Nuclear units will likely be more compact, requiring smaller buildings.

Offsetting these features, thick concrete shields probably will be required to house the reactor and prevent radioactive particles from contaminating personnel and the atmosphere.

More for AT&T

Mother Bell to borrow ¼ billion for expansion

To help finance its multi-billion-dollar construction program, American Telephone & Telegraph announced last week that it will sell $250 million of bonds at competitive bidding in September. At this news, prices in the corporate bond market weakened. Two issues of public utility bonds just being offered to the market had rather heavy going.

AT&T plans to open bids for the issue on Sept. 21. Until that date, it seems likely that corporations planning to raise money for construction or other purposes are going to have to pay a little higher rate of interest than they would otherwise have had to pay.

The reason for this, of course, is that the visible supply of investments has suddenly increased by one-quarter of a billion dollars. Investors looking for places to put their money will now become a little choosier about what they buy. They can expect that the AT&T offering will be on generous terms, because of its size and because of the huge volume of outstanding AT&T debt securities.

Mother Bell already has raised about $4,346 million since the start of 1946, and subsidiary companies have raised many millions more. AT&T and its subsidiaries have spent more than $9 billion on construction since World War II to keep up with the tremendous demand for telephone service.

Though AT&T's current $250-million offering has been topped in size many times before by other AT&T issues, and has been exceeded by bond issues of other companies, this is the biggest corporate issue ever to be sold at competitive bidding. The more usual practice is for terms of corporate issues to be negotiated. The issue is also unusual in that it won't be convertible into stock, as all AT&T bond issues have been since 1950.

(B&F continued on page 64)

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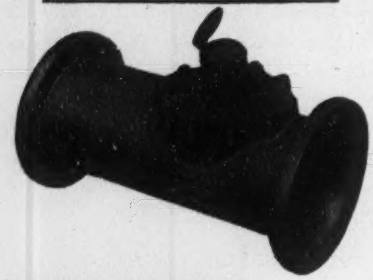

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Loans without FHA

Uninsured home loans can be a lot more profitable

Contractors and dealers who handle home modernization work would do well to encourage their local commercial banks to look into the possibilities of setting up their own home-improvement loan programs.

That's the implication of a study being published this month by the American Bankers Assn. It finds that more and more banks are running their own programs without insurance, because the ¾% premium which FHA requires on Title I loans is higher than losses sustained by well-run uninsured loan setups.

ABA's Installment Credit Commission looked over a number of home-improvement loan plans run by banks independently of FHA. It found that in every case their losses from bad loans were less than the insurance they would have had to pay FHA. In some cases, losses have been about one-third of the FHA premium.

• **Profitable loans**—Title I loans are good business to banks, and the ABA study indicates that without the ¾% premium these home-improvement loans could be even more profitable. By law, banks are required to charge 5% annually on the original balance of a Title I loan. This works out to an actual gross yield of over 9%, since the loans are repaid in monthly installments, so that the lender's average outstanding balance for the whole period of the loan is substantially less than the face value of the loan. From this, the lender pays FHA an insurance premium of ¾% of the original balance.

Of course, there is a good deal of paperwork connected with running any loan program made up of a lot of small loans—and there are bound to be some losses. But a gross yield of 9%-plus still compares very favorably with the gross yields of from 3¼% to 6% from most loans which banks make to short-term commercial borrowers.

The ABA study indicates that the role played by a contractor in uninsured home-loan programs is much the same as under Title I. The contractor completes the loan application and forwards it to the bank, which naturally will have a strong motive for carefully checking the credit standing of both borrower and contractor.

July home starts decline

Housing starts dropped 7% in July from June, according to estimates published last week by the Bureau of Labor Statistics. The estimate of 112,000 non-farm housing units, however, was well above the 97,000 for the same 1953 month and second only to the July record of 144,000 set in 1950.

BLS figures that there were 109,000 private housing starts in July, which would work out to an annual rate of 1,174,000 according to its new seasonal formula (ENR Aug. 19, p. 154). Last year, private starts were a little less than 1.1 million. Private starts so far this year total almost 670,000, about 3% above the same period last year.

Warehouses once more get fast tax write-offs

In order to encourage construction of warehouses, the Office of Defense Mobilization is once more allowing fast tax write-offs for warehouses built in areas where the government needs storage facilities.

The warehouses are needed to store strategic stockpile materials, general dry merchandise, cotton, and government-owned machinery. For the strategic stockpile program alone, General Services Administration needs 4,000,000 sq ft of storage space—about $40 million worth of construction—in New England, eastern Pennsylvania, and the New Orleans area.

The type of structure now generally used to store stockpile materials is a 200,000-sq ft building, subdivided into five 40,000-sq ft areas. It's made of cinder block with steel superstructure, on ground level, with a flat roof.

The warehouse expansion goal has been suspended for more than a year. But this year Congress blocked the use of government funds to build storage facilities. So the goal was reopened. Before it was suspended, about $27 million of general storage construction got certificates, allowing a fast tax write-off for 40% of value.

Steel mill in New England is talked of once more

Once more, there's a move to build another steel mill in New England. This time the Stanley Works, of New Britain, Conn., and New England financial interests are looking into the possibilities of a semi-integrated mill to occupy one of Stanley's plants in Bridgeport.

The deal would work something like this: If Ebasco Services, Inc., which is now engaged in evaluating the profit prospects of the projected mill, decides it is feasible, a new company would be set up to buy the present land from Stanley. Then two electric furnaces would be set up to expand existing ingot capacity. A bar mill would also be built. Estimated cost is about $20 million.

The mill would definitely have a freight advantage over steel shipped in from other areas, some steel people estimate this at about $10 a ton. Furthermore, the furnaces could use scrap collected from New England industries.

Experts at Ebasco say they are convinced there is an opportunity in New England for a steel mill of this type. However, they won't have an opinion on the Bridgeport site until they have finished their studies.

Business briefs . . .

- **More housing bonds**—Local housing authorities will sell $136 million of housing bonds Sept. 14. These bonds will be backed by the federal government through the Public Housing Administration, and will add to the $1.4 billion already sold since 1951. The money is used to finance building of low-rent housing units.

- **Expansion**—Ruberoid Co., New York, producer of asphalt roofings and asbestos-cement materials, has moved into the gypsum field by acquiring the assets of Ebsary Gypsum Co., of Rochester, N. Y., and some Ebsary family property. The price was $2.5 million, including about $1.1 million in Ruberoid stock.

- **Titanium means construction**—Glidden Co. will spend about $12 million to build two plants in the Baltimore area to make titanium and titanium dioxide, according to board chairman Adrian Joyce. Future plans call for the possible construction of other plants costing about $38 million.

- **High octane**—Socony-Vacuum Oil Co., Inc., will build 13 catalytic reformers at 11 of its U. S. refineries, as part of a three-year, $165-million program. The reformers will be used to meet the increasing demand for high-octane gasoline.

- **West Coast stores**—G. R. Kinney Co., of New York, has just opened its first store on the West Coast. The company says it plans to build many more in that area.

- **Chicago office building**—Inland Steel Co. plans a $6-million, 17-story building in the downtown area.

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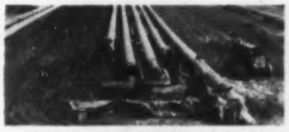

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UNIT PRICES

Low bids 0.3% apart for N.H. waterworks

Only $231 separates the lowest bidder among ten from second low bidder on the $80,217 waterworks improvement job let by the town of Newport, N. H. Hayden, Harding & Buchanan are consulting engineers. The project requires 11,360 feet of 10-in asbestos cement pipe, chlorination building, and an automatic control manhole at the distribution reservoir.

W. C. Ferguson, Keene, N. H., has 90 working days from July 23 to complete construction.

None of the items were bid as closely as the totals. Ferguson, 8% lower than second bidder on the asbestos cement pipe alternate, is $3,635 lower on that item. Second bidder R. W. Payne is 50% under Ferguson on gravel fill and two excavation items. The successful bid is 8% under Payne's for 10 in asbestos cement pipe, a $3,635 difference.

The contractor furnishes all materials. Highway transportation is available to the project; a railhead is five miles away.

Wage rates include a minimum of $2.65 per hour for skilled labor, $2.15 for semi-skilled, $1.35 for common labor.

Bidders include:

1C	W. C. Ferguson, Keene, N. H.	$80,217
2	2 R. W. Payne, Keene, N. H.	80,448

Bids: 7-9-54 Items	Unit	Quantity	Unit Prices 1 C	2
Exc below normal gr	cy	350	$1.00	$0.50
misc	cy	450	1.00	0.50
rock	cy	400	10.00	8.00
Gravel fill	cy	1,400	1.50	0.75
Concrete cl "C"	cy	15	25.00	20.00
Replace road surface	sy	2,300	1.50	1.00
Sheeting lip	Mf	2	0.10	0.08
Alternate "A" fi & p				
*CIP 10"	lf	11,360	4.35*	4.65
Asb cem pipe, 10.00"	lf	11,360	3.85	4.17
*9.68"	lf	11,360	3.70*	4.04
Alternate "B" lay only				
*CIP 10"	lf	11,360	1.15*	1.50
*Asb cem pipe 10.00"	lf	11,360	1.05*	1.50
*9.68"	lf	11,360	1.05*	1.50
Misc CIP, 6"	lf	80	3.50	2.95
8"	lf	30	4.00	3.83
10"	lf	120	4.50	4.16
CI fittings	lb	13,000	0.20	0.18
Gate valves, 6"	ea	10	60.00	70.90
8"	ea	2	80.00	99.05
10"	ea	6	125.00	152.65
Hydrants	ea	3	175.00	171.80
Blow-off manholes	ea	4	200.00	150.00
Air relief valves	ea	3	60.00	50.00
River crossing	ls	1	1,100	1,124
Connect to exist mains	ls	1	150.00	200.00
Pressurr reduc vlv & pipe.	ls	1	3,700	4,010
Reservoir MH, vlv & pipe.	ls	1	3,000	3,035
Chlorinator house	ls	1	5,800	4,858
equip—Builders Prov	ls	1	4,000	4,590
*W & T	ls	1	4,400*	5,000
heat	ls	1	750.00	1,285
elec.	ls	1	700.00	445.00
*reservoir level indic	ls	1	850.00	1,125
Cleaning up	ls	1	1.00	1.00

*This item not included in contract

Low excavation prices for New Jersey bridge

The bridge over Assunpink Creek between Lawrence and Hamilton townships in Mercer County, New Jersey, is being built by John W. Thompson Co., Trenton, for $81,980 at 13% below the engineer's estimate. The contract amount is $15,024 and 15% less than second low bidder's price. Edward L. Mount, County Engineer, designed the structure.

Three contractors submitted bids on the project.

Plans specify reinforced concrete abutments and wingwalls, steel composite I-beams, 68-ft span, 36-ft roadway, and two 6-ft sidewalks, metal railing, and bituminous concrete wearing surface on deck.

Design load of the new bridge is H20-S-16. It will replace an existing truss span of 78-ft that is inadequate in load capacity. The new bridge will be built in two stages with traffic maintained at all times. The old bridge is to be used during first half of construction.

The Thompson bid is 50% under second bid on channel excavation. It is 76% below second on foundation excavation, a $12,610 difference. Where the engineer's estimate was $15 per cu yd of foundation excavation, the Thompson bid was $4.00.

Prevailing wage rates in the project area include $3.55 per hour for skilled labor, $3.15 for semi-skilled, $2.15 for common labor. All materials are furnished by the contractor.

Work site is ¼ mile from the railhead.

Construction must be complete within 120 working days after July 28, 1954.

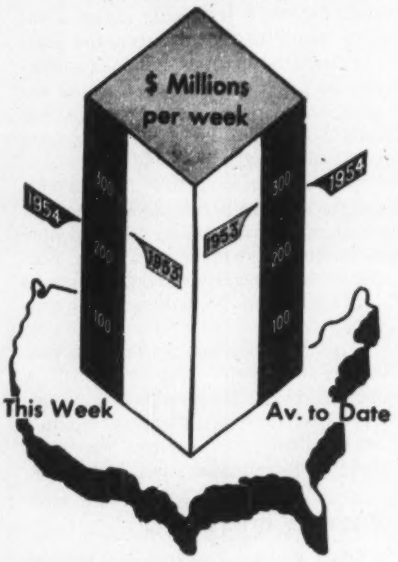
Bidders include:

1C	John W. Thompson Co., Trenton, N. J.	$81,980
2	J. Jingoli & Son, Trenton, N. J	97,004
3	Delaware Constr. & Landscape Co., Trenton, N. J.	98,096
EE	Mercer County Engineer, Trenton, N. J.	93,825

Bids: 7-13-54 Items	Unit	Quantity	Unit Prices 1 C	2
Rem stone walls	cy	65	$10.00	$25.00
exist superstruct.	ls	1	1,800	1,600
Exc, channel	cy	310	3.00	6.00
foundation	cy	970	4.00	17.00
Conc cl "D"	cy	157	70.00	69.00
"C"	cy	355	70.00	79.00
"B"	cy	88	60.00	89.00
Str stel	lb	107,000	0.16	0.16
Spirals	lb	900	0.20	0.20
Reinf steel	lb	30,000	0.18	0.14
Bridge railing	lf	242	10.00	9.00
Bit conc wearing surf.	ton	22	25.00	30.00
Approach fill	cy	185	3.00	3.00
paving	sy	200	7.00	6.00
curbing	lf	340	3.00	2.40
sidewalk	sy	45	5.00	5.80
Name plate	ls	1	150.00	175.00
Maintain traffic	ls	1	4,000	800.00
Inlet type B	ea	1	300.00	350.00
RCP 24"	lf	28	10.00	8.00

Activity This Week

As reported to ENR
(in millions of dollars)



Amount of contracts let

(Millions of dollars)

	This Week	Cumulative 34 wks 1954	1953	% chge
Federal	$9.8	$808.0	$1,044.5	—23
State and municipal	88.6	3,184.1	3,228.1	—1
Total public	98.4	3,992.1	4,272.6	—7
Total private	125.8	5,357.5	5,793.0	—8
U. S. Total	$224.2	$9,349.6	$10,065.6	—7

Contracts by type of work

	This Week	1954	1953	% chge
Waterworks	$7.1	$149.9	$153.8	—3
Sewerage	7.2	246.6	267.4	—8
Bridges	8.9	321.5	411.6	—22
Highways	29.9	1,194.4	1,174.3	+2
Earthwork, waterways	5.9	180.4	275.5	—35
Buildings:				
Public, excl. hsg.	25.7	1,159.4	1,126.1	+3
Housg. public	5.7	164.5	300.8	—45
Housg. private	59.9	2,780.3	2,426.9	+15
Commercial	33.2	849.9	825.8	+3
Industrial	24.4	1,277.1	1,865.4	—32
Unclassified	16.3	1,025.6	1,288.0	—17
Total	$224.2	$9,349.6	$10,065.6	—7

NOTE: Minimum size projects included are: Waterworks and waterways, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

New capital for construction

(millions of dollars)

	Week of Aug. 19 1954	Cumulative 33 Wks 1954	% chge '53-'54
Corporate securities	$20.3	$1,950.8	—38
State and municipal:			
All except housing	48.9	3,515.7	+27
Housing	21.1	91.0	—57
Federal loans	0.6	78.0	—6
Federal aid	...	630.0	—17
Total non-federal	90.9	$6,265.5	—10
Federal appropriations:			
In U. S.	$84.0	$1,210.0	—21
Outside U. S.	...	28.4	—1
Total new capital	$174.8	$7,503.9	—12

ENR cost and volume indexes, 1954

		Base years = 100 1913	1926	1949
Construction cost	8/19	639.80	307.55	134.12
	7/29†	642.05	308.63	134.60
Building cost	8/19	453.79	245.31	128.99
	7/29†	455.51	246.23	129.48
	7/29†	455.51	246.23	129.48
Volume	July	547	222	158
	June	510	207	147

‡Official ENR monthly index for August

it takes two

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COMPANY ____________________

ADDRESS ____________________

CITY ____________ STATE ____________

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-4232) will be received at Denver, Colorado, until September 21, 1954, for furnishing four motor-driven, horizontal, centrifugal-type pumping units, each having a capacity of 40 cfs under a total head of 82 ft. for Mesa Pumping Plant, Area P-5, Potholes East Canal Laterals, Columbia Basin Project, Washington. Delivery is desired within 365 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: September 7, 1954

Pennsylvania Turnpike Commission

Harrisburg, Pennsylvania

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 a.m., Eastern Daylight Saving Time, the 7th day of September 1954, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract.

For the construction of structures and the grading, drainage and paving of the Turnpike Section 35-D, part of the Northeastern Extension of the Pennsylvania Turnpike in Towamencin, Lower Salford and Franconia Townships, Montgomery County, Commonwealth of Pennsylvania, this section being situated as follows:

Beginning at a point approximately 1719 lin. ft. southeast of the center line of the presently existing Township Road 397 at Turnpike Station 490+50 in Towamencin Township, Montgomery County; thence in a northwesterly direction 22,905 lin. ft. to Turnpike Station 719+55, at a point approximately 1131 lin. ft. northwest of the center line of the presently existing center line of Legislative Route 46051 in Franconia Township, Montgomery County, a distance of approximately 4.34 miles.

The approximate quantities of the principal items are as follows:

Class 1 Excavation	691,966 cu. yds.
Class 2 Excavation	18,016 cu. yds.
Class 2-A Excavation	4,770 cu. yds.
Borrow Excavation	222,533 cu. yds.
Special Subgrade	232,567 sq. yds.
Reinforced Concrete Pavement	150,843 sq. yds.
Class A Concrete	4,271 cu. yds.
Class B Concrete	7,992 cu. yds.
Plain Steel Bars	1,198,251 lbs.
Fabricated Structural Steel	2,785,034 lbs.
Median Divider	22,200 lin. ft.

Copies of plans, specifications and other contract documents, including cross-sections, are on file and open to public inspection at the office of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on August 24, 1954. Plans, specifications, cross-sections and other contract documents will be available by this date for inspection or for mailing to prospective bidders. Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5) dollars per copy. Copies of cross-sections may be purchased from the Pennsylvania Turnpike Commission for the sum of fifty (50) dollars per set.

Plans and contract documents, for this section exclusive of cross-sections and specifications, may be purchased from the Pennsylvania Turnpike Commission for the sum of twenty (20) dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P.O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications, contract documents, and cross-sections.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE
COMMISSION
James F. Torrance
Secretary and Treasurer

OFFICIAL PROPOSALS

Bids: September 9, 1954

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 9th day of September 1954, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following project: in Oneida County, L. Ketchum, Dist. Engr., 109 No. Genesee St., Utica, N. Y.:

Contract No.	Type	Name of highway and miles	Deposit for plans	Bid deposit	Dept. est.
RC(MT) 54-99	Asp. Conc. Opt. 4 Sp. I-Beam Hy.Sep. 145'	Utica-Maynard, SH 1517 (Temporary Grade Sep. with N.Y.S. Thruway-Mohawk Sect.-Sub. 9) 0.18 Mile	$10	$4,500	$81,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, simliar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each poropsal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders."

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: September 23, 1954

Construction of Water System

WOODBOURNE WATER DISTRICT
TOWN OF FALLSBURGH, N. Y.

1. Sealed proposals for Contracts I, II, III, and IV for construction of a water system in the Woodbourne Water District will be received by the Town Board, Town of Fallsburgh, Sullivan County, New York until 2:00 p.m., E.D.S.T., September 23, 1954, in the Town Clerk's Office at South Fallsburgh, and there publicly opened and read immediately thereafter.
2. The work of the various contracts is as follows—Contract I, constructing test wells, 2 permanent wells with pumps and motors; Contract II, constructing 2 well houses, standpipe foundation, and electrical work; Contract III, constructing 350,000 gallon steel standpipe; Contract IV, constructing 23,000 lin. ft. of 6", 8" and 10" mains with hydrants, valves and house services.
3. Plans, specifications, bidding and contract documents may be examined at the Town Clerk's Office and at the office of the Consulting Engineers, Alexander Potter Associates, 50 Church St., New York 7, N. Y., and there be obtained upon a deposit of ten (10) dollars per set.
4. Full refund will be made to actual bidders for return of one (1) set, in good condition, within two weeks after the closing date for receipt of bids; refund for return of all other sets in good condition, by actual bidders, within the same period, will be fifty (50) percent of the deposit.
5. All proposals must be on the form contained in the specifications.
6. All bids must be accompanied by a certified check in the amount of ten (10) percent of the amount of the bid, made payable to the Town of Fallsburgh. Said checks will be refunded to all, except the two (2) lowest bidders, not later than ten (10) days after opening of bids.
7. The successful bidder will be required to furnish a Performance Bond conditioned upon the faithful performance of the contract and upon the payment of all persons supplying labor and furnishing materials on the construction of the work.
8. No bidder may withdraw his bid within thirty (30) days atfer closing date for receipt of bids.
9. The Town Board reserves the right to reject any oral bids and to waive any informality in the bid, and to accept that proposal which, in its judgment, best serves the interests of the Water District.

Woodbourne Water District
Town of Fallsburgh, N. Y.
By: Mortimer Michaels, Supervisor.

Bids: September 14, 1954

Sanitary Sewers, Manholes and Miscellaneous Appurtenances

THE COMMISSIONERS OF LOWER MERION TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

Sealed proposals will be received at the Office of the Commissioners of Lower Merion Township, 75 East Lancaster Avenue, Ardmore, Pennsylvania, until 7:30 P.M. (E.D.S.T.) Tuesday, September 14, 1954, at which time they will be publicly opened and read aloud, for furnishing all labor, and materials for the construction of approximately 58,200 lineal feet of 8", 10", 12", 15", 18" and 24" SANITARY SEWERS, manholes and miscellaneous appurtenances, plus approximately 25,200 lineal feet of 6", 8", and 16" cast iron Force Mains, and for the construction of SEWAGE PUMPING STATIONS as listed hereinafter.

The sewer work will be divided into three contracts designated as:

CONTRACT NO. 1—Belmont Hills Branch Sewers; intercepting Sewers and Glanraffon Force Main
CONTRACT No. 2—Belmont Hills Force Main; Mill Creek Force Main; Belmont Ave. Sewer; Gulley Run Intercepting Sewer
CONTRACT NO. 3—Gulph Creek Area branch and Intercepting Sewers and Force Main

A new Sewage Pumping Station will be constructed at each of the following locations: Glanraffon Creek, Belmont Hills, Mill Creek, Ardmore and Gulph Creek. Improvements will also be made at the existing Cynwyd Sewage Pumping Station.

Work on all Sewage Pumping Stations will be included under the following contracts:

CONTRACT NO. 4—Structural Work
CONTRACT NO. 5—Mechanical Work, (Including Plumbing Work)
CONTRACT NO. 6—Electrical Work
CONTRACT NO. 7—Heating and Ventilating Work

Contracts Nos. 4 and 5 may be bid in combination.

Plans and Specifications may be examined at the Office of the Township Engineer, Sanitary Drainage Department, 75 East Lancaster Avenue, Ardmore, Pennsylvania and at the office of Albright & Friel Inc., Consulting Engineers, 121 South Broad St., Philadelphia 7, Penna. A separate set of plans is provided for each sewer contract, whereas all Sewage Pumping Contracts are included in one set of documents.

Sets of documents may be obtained only at the office of Albright & Friel Inc. upon the deposit of Fifty Dollars $50.00 for each set pertaining to Sewage Pumping Stations, and Twenty-five Dollars ($25.00) for each set for each Sewer Contract.

If the documents are returned in good condition within ten (10) days after the opening of bids, the full amount of the deposit for one set will be refunded to each actual bidder, and other deposits will be refunded with a deduction of one-half the amount of deposits to defray the cost of reproduction of the set of documents. If the documents are not returned within the time stated, the entire amount of the deposit will be forfeited.

The Commissioners reserve the right to reject any or all bids or parts of bids, as deemed to the best interests of the Township.

EVAN L. JAMES
Township Secretary

OFFICIAL PROPOSALS

Bids: September 16, 1954

15 Trucks—Snow Plows and Associated Equipment

THE PORT OF NEW YORK AUTHORITY
FOR DELIVERY IN METROPOLITAN
NEW JERSEY AND NEW YORK
PROPOSAL NUMBERS 488 TO 497
INCLUSIVE

Sealed proposals for furnishing 8—two ton dump trucks, 4—four wheel drive (14,500 G.V.W.) trucks, 3—21,000 G.V.D. dump trucks with snow plows and associated equipment, will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M., (D.S.T.) Thursday, September 16, 1954, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

Bids: September 15, 1954

Indiana Toll Road Commission

309 W. Washington Street
Old Trails Building
Indianapolis, Indiana

NOTICE TO BIDDERS

Contract C-38
Contract C-39
Contract C-40/41
Contract C-38 and C-39
Contract C-39 and C-40/41
Contract C-38, C-39 and C-40/41

Sealed proposals will be received by the Indiana Toll Road Commission at or before 10:00 A.M., Central Standard Time, September 15, 1954 for the performance of each of the contracts enumerated above.

Contract No. C-38

The grading, drainage, structures and paving of approximately 3.6 miles in Construction Section C-38 of the Indiana East-West Toll Road beginning at a point about 6,837 feet west of Elkhart County Road No. 39 at Toll Road Centerline Station 5750+00 in Elkhart County and extending easterly to a point about 1,302.4 feet east of the Elkhart-LaGrange County Line Road at Toll Road Centerline Station 5939+41.2 in LaGrange County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation	41,200 Cubic Yards
Borrow	850,000 Cubic Yards
10" Reinforced Concrete Pavement	122,000 Square Yards
Culvert Pipes	5,065 Lineal Feet
Steel Piling	2,500 Lineal Feet
Concrete for Structures	2,185 Cubic Yards
Reinforcing Steel	318,000 Pounds
Fabricated Structural Steel	669,000 Pounds

Contract No. C-39

The grading, drainage, structures and paving of approximately 3.9 miles in Construction Section C-39 of the Inidana East-West Toll Road beginning at a point about 1,302.4 feet east of the Elkhart-LaGrange County Line Road at Toll Road Centerline Station 5939+41.2 in LaGrange County and extending easterly to the west bank of the Pigeon River at Toll Road Centerline Station 6144+77.78 in LaGrange County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation	190,000 Cubic Yards
Borrow	302,800 Cubic Yards
10" Reinforced Concrete Pavement	115,000 Square Yards
Culvert Pipes	4,680 Lineal Feet
Steel Piling	3,500 Lineal Feet
Concrete for Structures	2,545 Cubic Yards
Reinforcing Steel	359,200 Pounds
Fabricated Structural Steel	677,600 Pounds

NOTICE TO BIDDERS

Contract No. C-40/41

The grading, drainage, channel improvement, structures and paving of approximately 6.5 miles in Construction Section C-40/41 of the Indiana East-West Toll Road beginning at the west bank of the Pigeon River at Toll Road Centerline Station 6144+77.78 in LaGrange County and extending easterly to the west bank of the Fawn River at Toll Road Centerline Station 6490+50 in LaGrange County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation	150,000 Cubic Yards
Peat Excavation	190,000 Cubic Yards
Waterway Excavation	20,000 Cubic Yards
Borrow	1,165,000 Cubic Yards
10" Reinforced Concrete Pavement	201,300 Square Yards
Culvert Pipes	6,689 Lineal Feet
Steel Piling	8,240 Lineal Feet
Concrete for Structures	5,494 Cubic Yards
Reinforcing Steel	808,200 Pounds
Fabricated Structural Steel	1,681,100 Pounds

The work covered by Contracts Nos. C-38 and C-39, C-39 and C-40/41, or C-38, C-39 and C-40/41 which covers a combination of Construction Sections C-38, C-39 and C-40/41 is the construction as described for the individual Construction Sections, taken together.

Copies of the Plans, Specifications and Proposal Forms for said Contracts are available for public inspection or purchase at the office of the Chief Engineer, Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

Standard Specifications for the Indiana East-West Toll Road	$ 5.00
Plans, Special Provisions and Proposal Forms, per set, per Construction Section	$25.00
Informational Drawings	
Cross-Sections, per set, per Construction Section	$25.00
Soil Plan and Profiles, per set, per Construction Section	$ 5.00

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Each Proposal must be accompanied by a Proposal Guaranty in the amount of five (5%) percent of the total price bid per Construction Section covered by the Contract. If the Bidder shall tender bids for two or more Contracts which include the same Construction Section, the Construction Section thus duplicated in the bidding need be counted only once in determining the total amount of the Proposal Guaranty. The Proposal Guaranty shall be in the form of an acceptable surety bond or a certified check on a solvent bank.

If the Bidder is an out of state corporation, he shall be required to furnish a certificate from the Secretary of State of Indiana as evidence that the corporation has complied with the Indiana Foreign Corporation Statutes, and that the corporation is authorized to transact business in the State of Indiana.

NOTICE TO BIDDERS

All bids must be received at or before 10:00 A.M., Central Standard Time, September 15, 1954, in the offices of the Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. At said hour, the bid box will be publicly opened and the bids read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

INDIANA TOLL ROAD COMMISSION
Charles W. Keating — Dr. Dillon Geiger
Secretary-Treasurer — Chairman

Bids: September 13, 1954

The Power Authority of the State of New York

ADVERTISEMENT FOR PROPOSALS
FOR
THE FABRICATION & ERECTION OF THE SUPERSTRUCTURE AND FLOATING SUPPORTS
OF A
TEMPORARY STEEL TRUSS, FLOATING BRIDGE
CONNECTING HAWKINS POINT TO BARNHART ISLAND
OVER ST. LAWRENCE RIVER
NEAR MASSENA, ST. LAWRENCE COUNTY, NEW YORK
SPECIFICATIONS NO. 5425-A
ST. LAWRENCE CONTRACT NO. 2

NOTICE TO CONTRACTORS: THE POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the fabrication and erection of a temporary steel truss, floating bridge connecting Hawkins Point to Barnhart Island over St. Lawrence River, near Massena, St. Lawrence County, New York, until 10:30 A.M. Eastern Standard Time on the 13th day of September, 1954 at 270 Broadway, Room 1207A, New York 7, New York, at which time and place proposals will be publicly opened and read aloud.

Plans, specifications and Proposal Forms for the work are on file in the Authority's Office and in the offices of the Engineers, Praeger-Kavanagh, 126 East 38 Street, New York, New York; The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, and may be inspected by prospective bidders during office hours.

Plans, specifications and Proposal Forms may be obtained from The Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, after August 23, 1954 upon application and payment of a fee of Thirty ($30.00) dollars per set, plus mailing costs, no part of which will be refunded.

Bids must be made upon the proposal forms included in the Contract Documents. Each proposal must be accompanied by draft or certified check payable to the order of The Power Authority of the State of New York for the sum of $25,000.00.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

U. S. Government

On or about Aug. 27, 1954, bidding material for Construction (Except Elevators and Dumbwaiters) of the Hospital Center, D. C., at the U. S. Soldiers Home Grounds, Washington, D. C., will be available for distribution to general contractors by this office. Applications from general contractors interested in bidding on this work, for not to exceed three sets of drawings and specifications, should be filed promptly with this office and the bidding material will be forwarded as soon as available. Bids will be opened on the date named in the Bidding Forms, which will be about six weeks after the bidding material is available for distribution. Bidding material will be available at Room No. 1304, General Services Building, 19th and F Streets, N.W., Washington 25, D. C., Phone EXecutive 3-4900, Extension 2397. P. A. Strobel, Commissioner of Public Buildings Service, General Services Administration.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-4233) will be received at Denver, Colorado, until September 23, 1954, for furnishing motor-driven, horizontal, centrifugal-type pumping units having the following capacities, in cubic feet per second, under a total head of 168 feet: One Unit 20 cfs, one Unit 40 cfs, and three Units 60 cfs each for Unit A Pumping Plant, Northside Pumping Division, Minidoka Project, Idaho. Delivery is desired within 420 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

Bureau of Reclamation, North Platte River District 81354-P2, Casper, Wyoming. For Immediate Release August 12, 1954. UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION. NOTICE IS HEREBY GIVEN that sealed bids on Specifications No. 703C-352 for furnishing labor and materials and performing all work for earthwork and buried asphaltic membrane lining, Casper Canal, station 819+00 to station 838+50 and station 852+48.5 to station 861+98.3, Kendrick Project, Wyoming, will be mailed to Box 280, Casper, Wyoming or delivered to the office of the Bureau of Reclamation in time for the public opening at 10:30 a.m., Mountain Standard Time, September 14, 1954, at the office of the Bureau of Reclamation, Reclamation Center, Casper, Wyoming. Copies of the standard forms and of the specifications may be obtained from the following offices of the Bureau of Reclamation: R. J. Walter, Jr., Regional Director, Building No. 46, Denver Federal Center, Denver, Colorado; and I. J. Matthews, District Manager, Box 280, Casper, Wyoming. No charge for copies of the specifications and drawings furnished for bidding purposes; for all others $1.25 per copy, not returnable. Payments should be made by check or money order payable to the Treasurer of the United States. I. J. Matthews, District Manager.

Read the Official
Proposal Columns of
ENGINEERING NEWS-RECORD
This Week and Every Week

Bids: September 9, 1954

Soil Explorations and Foundation Investigations

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Daylight Time, on September 9, 1954 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON THE NEW YORK STATE THRUWAY, NEW ENGLAND SECTION, NEW ROCHELLE TO CONNECTICUT STATE LINE, WESTCHESTER COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. SM-70

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.

(b) J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.

(c) Charles Schaefer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $21,550.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $1078.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

B. D. Tallamy
SUPERINTENDENT OF PUBLIC WORKS

Bids: September 7, 1954

Construction of Bridge and Approaches

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

DIVIDING CREEK BRIDGE

Construction of Dividing Creek Bridge & Approaches over Dividing Creek, on Bridgeton-Port Norris Road, Downe Township, Cumberland County, Federal Aid Secondary Project No. S-191(1). Length 0.166 miles. The principal items of construction are:

Estimated:

	Bridge Items
L. S.	—Clearing Site
2,550	lin. ft. Treated Timber Piles
368	cu. yds. Concrete
43,716	lbs. Reinforcing Steel
55,500	lbs. Structural Steel
	Roadway Items
4,691	cu. yds. Borrow Excavation
2,806	sq. yds. 8" & 10" Road Gravel
225	tons 2" Bituminous Concrete Type FA-BC-1
140	cu. yds. Mortar Rubble Wall

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Tuesday, September 7, 1954, at NINE o'clock (9:00 A.M.—EASTERN STANDARD TIME), TEN o'clock (10:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Secondary Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P. L. 769, 81st Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, 22 Washington Street, Bridgeton, New Jersey. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished upon payment of a fee of Ten Dollars ($10.00) which will not be refunded for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

Bids: September 8, 1954

Indiana Toll Road

INDIANA TOLL ROAD COMMISSION
309 W. Washington Street
Old Trails Building
Indianapolis, Indiana
NOTICE TO BIDDERS

Contract C-51
Contract C-52
Contract C-53
Contract C-51 and C-52
Contract C-52 and C-53
Contract C-51, C-52 and C-53

Sealed proposals will be received by the Indiana Toll Road Commission at or before 10:00 A.M., Central Standard Time, September 8, 1954 for the performance of each of the contracts enumerated above.

Contract No. C-51

The grading, drainage, structures and paving for approximately 3.2 miles in Construction Section C-51 of the Indiana East-West Toll Road beginning at a point about 4,555 feet northwest of the intersection of the Toll Road Centerline and State Route 120 at Toll Road Centerline Station 7847+00 in Steuben County and extending easterly and southeasterly to a point about 879 feet southeast of the intersection of the Toll Road Centerline and State Route 827 at Toll Road Centerline Station 8014+00 in Steuben County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation.	865,000 Cubic Yards
Borrow	348,000 Cubic Yards
10" Reinforced Concrete Pavement...	91,600 Square Yards
Culvert Pipes and Underdrains	10,480 Lineal Feet
Cast-in-Place Concrete Piling	8,700 Lineal Feet
Concrete for Structures	4,660 Cubic Yards
Reinforcing Steel....	637,300 Pounds
Fabricated Structural Steel	1,061,300 Pounds

Contract C-52

The grading, drainage, structures and paving for approximately 4.1 miles in Construction Section C-52 of the Indiana East-West Toll Roard beginning at a point about 879 feet southeast of the intersection of the Toll Road Centerline and State Route 827 at Toll Road Centerline Station 8014+00 in Stueben County and extending southeasterly to a point about 4,600 feet northwest of the intersection of the Toll Road Centerline and Burch Road at Toll Road Centerline Station 8232+00 in Steuben County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation..	589,000 Cubic Yards
10" Reinforced Concrete Pavement...	116,200 Square Yards
Culvert Pipes and Underdrains	12,920 Lineal Feet
Cast-in-Place Concrete Piling.......	8,000 Lineal Feet
Concrete for Structures	3,210 Cubic Yards
Reinforcing Steel....	484,400 Pounds
Fabricated Structural Steel........	1,139,000 Pounds

Contract No. C-53

The grading, drainage, structures and paving for approximately 5.1 miles in Construction Section C-53 of the Indiana East-West Toll Road beginning at a point about 4,600 feet northwest of the intersection of the Toll Road Centerline and Burch Road at Toll Road Station 8232+00 in Steuben County and extending southeasterly and easterly to a point in the Indiana-Ohio State line about 3,668 feet east of the intersection of the Toll Road Centerline and U. S. Route 20 at Toll Road Station 8500+00 in Steuben County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation.	1,076,000 Cubic Yards
Borrow	8,000 Cubic Yards
10" Reinforced Concrete Pavement...	142,300 Square Yards
Culvert Pipes and Underdrains	28,290 Lineal Feet
Cast-in-Place Concrete Piling.......	14,400 Lineal Feet
Concrete for Structures	7,370 Cubic Yards
Reinforcing Steel....	1,218,500 Pounds
Fabricated Structural Steel........	2,049,000 Pounds

The work covered by Contract C-51, C-52 and C-53, which covers a combination of Construction Sections C-51 and C-52, C-52 and C-53, C-51, C-52 and C-53, is the construction as above described for the individual Construction Sections, taken together.

Copies of the Plans, Specifications and Proposal Forms for said Contracts are available for public inspection or purchase at the office of the Chief Engineer, Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

Standard Specifications for the Indiana East-West Toll Road.	$ 5.00
Plans, Special Provisions and Proposal Forms, per set, per Construction Section	$25.00
Informational Drawings	
Cross-Sections, per set, per Construction Section	$25.00
Soil Plan and Profiles, per set, per Construction Section......	$ 5.00

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Contractor's statement for qualification on the forms supplied by the Commission will be required from all Bidders.

Each Proposal must be accompanied by a Proposal Guaranty in the amount of five (5%) percent of the total price bid per Construction Section covered by the Contract. If the Bidder shall tender bids for two or more Contracts which include the same Construction Section, the Construction Section thus duplicated in the bidding need be counted only once in determining the total amount of the Proposal Guaranty. The Proposal Guaranty shall be in the form of an acceptable surety bond or a certified check on a solvent bank.

If the Bidder is an out of state corporation, he shall be required to furnish a certificate from the Secretary of State of Indiana as evidence that the corporation has complied with the Indiana Foreign Corporation Statutes, and that the corporation is authorized to transact business in the State of Indiana.

All bids must be received at or before 10:00 A.M., Central Standard Time, September 8, 1954, in the offices of the Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. At said hour, the bid box will be publicly opened and the bids read.

The award of any of the above-enumerated Contracts if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

INDIANA TOLL ROAD COMMISSION
Charles W. Keating — Dr. Dillon Geiger
Secretary-Treasure — Chairman

BRIDGE ENGINEERS AND SPECIFICATION WRITERS

Civil Graduates of accredited U. S. colleges. Must have not less than the following experience:

Detailers—2 years structural steel or reinforced concrete detailing.

Designers—5 years responsible work on structural steel and concrete including work on long span bridges.

Squad Leaders—3 years responsible charge of squad on structural steel detailing.

Specification Writers—With design and field experience for writing specifications for steel bridges, concrete structures, and highway construction.

Please mail complete resume together with salary required to:

Howard, Needles, Tammen & Bergendoff
55 Liberty Street New York 5, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

CITY ENGINEER — City of Montebello, California (pop. 25,000) invites applications. California registration with one year of experience in municipal government in administrative capacity. Salary range—$629-703. Maximum age 65. Apply by September 1, 1954 to Personnel Officer, City Hall, 140 North Sixth Street, Montebello, California.

FIELD SUPERINTENDENT, experienced, for large scale seeding work in several eastern states. Permanent. Steve Brody Inc., Lynbrook, N. Y.

CLERK OF the Works. Heavy experience in large building projects to serve as Resident Engineer on construction of High School starting September. Send resume of education, experience and salary expected to Herman J. Connors. Business Manager, Board of Education, Passaic, New Jersey.

WANTED EXPERIENCED structural steel detail draftsman for small shop doing general fabricating business in Class A structural steel for buildings. Man must be fast, thorough and accurate. Give age, experience, references and salary expected with application. Berger Steel Company, Inc., Lafayette, Ind.

LARGE EASTERN contracting company engaged in heavy construction desires man to fill position as superintendent of equipment maintenance. Position permanent for right man. Include education, experience, references, and salary expected in application letter. Reply P-3556, Engineering News-Record.

CHIEF ESTIMATOR, General Contractor operating in South and Midwest desires experienced building estimator. Excellent opportunity for man able to accept full responsibility with aggressive, growing concern. Reply fully, stating experience, personnal data and salary requirements to Blount Brothers Construction Company, P O Box 1144, Montgomery, Alabama.

ESTIMATING OPPORTUNITY—Recent graduate with some field experience on commercial and industrial building for quality surveys. Opportunity for man interested in estimating with well established firm, headquarters Central Illinois. State qualifications & salary expected. P-3549. Engineering News-Record.

CIVIL, HIGHWAY, Drainage and Bridges Engineers, Designers, Specification Writers, Cost Estimators, Draftsman, and Surveyors for Permanent assignment on Airport, Highway, Expressway and Bridge Projects. Location East and Southeast States. An opportunity for producers of quality work. Submit resume, age, education, experience, title and duties, references, salary required, and availability. P-3593, Engineering News-Record.

EXPERIENCED STRUCTURAL Engineers Highway Bridge design up-state New York area include education, experience and salary expected in application. P-3655, Engineering News-Record.

CIVIL ENGINEER, youthful, Service Discharge, estimating, layout, direct work crews efficiently for underground City Public Utility Lines and structures, roads and related activities. C. P. Ward, Inc., 700 Hollenbeck Street, Rochester 21, New York.

CIVIL ENGINEER. Aggressive, young firm of Civil Engineers located in Illinois needs the service of a civil engineer under 35 years of age for permanent position. Must be Registered Professional Engineer capable of becoming Registered in Illinois. Experienced in Survey, Design and Construction Supervision of Highway and City Street Projects and related Municipal Improvements. Knowledge of Sewer and Water Works Improvements valuable. Please state full qualifications, experience, education and salary requirements. P-3727, Engineering News-Record.

SEARCHLIGHT SECTION

(Classified Advertising)

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SEND NEW ADVERTISEMENTS to N. Y. office, 330 W. 42nd St., N. Y. 36, for September 9th issue, closing August 27th

---

MECHANICAL ENGINEER WANTED

Graduate Mechanical Engineer experienced in the operation of Fourdrinier paper machines, refining and related equipment for large progressive mill in Middle Atlantic States. Under 35 years of age. Good salary and excellent opportunity for advancement. Give detailed resume of experience.

P-3545, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

BRIDGE and HIGHWAY ENGINEERS

New York firm of engineers has openings for designers, with at least 5 years' responsible experience in structural steel and reinforced concrete; detailers with at least 2 years' experience in the same fields.
Submit resume of experience, references and salary expected to—

P-3689, Engineering News-Record
330 W. 42 St. New York 36, N. Y.

MECHANICAL ENGINEER WANTED

Graduate Mechanical Engineer experienced in pulp and paper maintenance for large progressive mill in Middle Atlantic States. Under 35 years of age. Good salary with excellent opportunity for advancement. Give detailed resume of experience.

P-3547, Engineering New-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS VACANT

UNUSUAL OPPORTUNITY open to experienced bridge designer between thirty-five and fifty years of age. Replies should state education, experience and salary desired. P-3713, Engineering News-Record.

ENGINEER, CIVIL or equivalent, for sales work to develop Engineering Department, to promote new structural products having National market and great potential, long established manufacturer. P-3678, Engineering News-Record.

CONSTRUCTION ENGINEER, GS-7, $4205 per annum. For information write Mr. Pagliaro, Personnel Br. Corps of Engineers, 80 Lafayette St., N. Y. 13, N. Y.

DIR. OF Pub. Works with CE degree and min. 3 yrs. exp. Municipal work or related fields. Salary open. Write M. D. Harmon, City Mgr., City of Boulder, Boulder, Colo.

SELLING OPPORTUNITY OFFERED

SALES ENGINEER — Rochester, New York and Pittsburgh, Pennsylvania territories open with established national concern selling prefabricated metal products to engineering and construction markets. Positions are permanent and offer excellent future with aggressive, progressive and expanding organization. Engineering degree desirable. Previous sales experience unnecessary. Ages 24 to 30. Car furnished. Complete training program. Salary and bonus. RW-2289, Engineering News-Reeord.

EMPLOYMENT SERVICE

OVERSEAS PROJECTS Guide to most active construction-engineers, oil co's., gov't & UN groups hiring for foreign projects. Send $1. Cove-McKane Int., GPO Box 126E, NY 1, NY.

POSITIONS WANTED

CONSTRUCTION ENGINEER experienced in erection industrial, chemical, oil and gas plants desires job. Not too particular about location. PW-3508, Engineering News-Record.

HEAVY CONSTRUCTION manager available. Can staff a job with most key personnel including engineering, accounting, foremen and superintendents. Reply Box PW-3453, Engineering News-Record.

EXPERIENCED CONSTRUCTION Superintendent wants job. Location immaterial. PW-3532, Engineering News-Record.

(Continued on following page)

ENGINEERS

Foreign Service

Graduate Chemical, Mechanical, Electrical & Construction Engineers with minimum of 5 years' experience. For specialized assignments commensurate with qualifications in various phases of construction, estimating materials and cost control, planning and refinery process work. Write giving full particulars regarding personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 30

Arabian American Oil Company

505 Park Avenue, New York 22, N. Y.

OPPORTUNITY

For an energetic engineer with sales personality

25 to 35 years of age, for sales work with company operating on nationwide basis furnishing Concrete Form Engineering and Rental Service. General construction experience and some Engineering college training essential. Give full details in first letter to

R. P. Wilkinson, Economy Forms Corp.
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WANTED

Designing engineers, highways-thruways, bridges, airfields, drainage, sanitation, hydraulic, soil mechanics, structural.

Draftsmen, designers, to Project Manager.

Submit resume

SEELYE STEVENSON VALUE & KNECHT
101 Park Ave. New York 17, N. Y.

SANITARY ENGINEER

Opportunity available for Sanitary Engineer in an expanding pulp and paper mill located in the Middle Atlantic States. Age 25-35 years. Experienced in paper mill wastes, stream pollution and water purification or similar experience. Good salary and advancement. Send resume of educational background and industrial experience. All replies confidential.

P-3542, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED

Rigger-Millwright Supervisor

Services of Engineer with experience in soliciting, estimating and supervising Machinery and Other Installations Department. Long established general truckman in Eastern Pennsylvania Area. Furnish experience, salary, all details. Confidential.

P-3737, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS WANTED

(Continued from preceding page)

BRIDGE SUPERINTENDENT or Carpenter foreman, 28 years experience, sober, cost conscious, good organizer, hard pusher, Eastern states preferred. Available now. PW-3517, Engineering News-Record.

MANAGER EXECUTIVE 15 years experience in engineering and construction. Broad knowledge of foreign and domestic work. Graduate engineer. PW-3656, Engineering News-Record.

CIVIL ENGINEER graduate. Age 33, 8 years experience. 2½ years in field, 5½ years in office. Experienced in field supervision, design, drafting, estimating, costs, quantity take-offs; also experienced in reinforced and prestressed concrete. Prefer N. Y. area. Available Sept 1st. PW-3657, Engineering News-Record.

CONSTRUCTION EXECUTIVE, long New York experience buildings and heavy construction, available for new connection as Project Manager on large operation or as Contractor's executive, where scope will permit full use of ability. Inquires solicited from contractors requiring top man, qualified to handle all phases, bid to completion. New York area preferred. PW-3661, Engineering News-Record.

PROJECT MANAGER — General Superintendent, 29 years field experience. All phases heavy construction—domestic and foreign. Able to set up, organize and run field end of entice job. Age 45. College trained. Available at once. PW-3595, Engineering News-Record.

ELECTRICAL ENGINEER, age 36, 17 years electrical design & specifications for hospitals, public bldgs., schools, industrial & chemical plants and power plants. Also considerable airport design experience. Familiar all phases of the electrical construction industry. Capable of taking complete charge. Has architect following. Willing to relocate. PW-3705, Engineering News-Record.

CHIEF DRAFTSMAN of Structural Steel Fabricating Co. desires similar position as chief engineer or chief draftsman with a small established fabricator, employing not more than 10 structural draftsmen. Have had over 20 years experience in structural steel & reinforced concrete. PW-3720, Engineering News-Record.

ENGINEER—31, married. 8 yrs. civil, piping and electronic drafting and 3 yrs. structural and instrumentation engineering experience, 6 yrs. in supervisory position. Desire responsible position southeast. PW-3710, Engineering News-Record.

HAVE MUCH to offer contractors in heavy construction field as top flight supervisior. Age 42. Reply PW-3709, Engineering News-Record.

SALES EXPERIENCE thru the 30's. Heavy construction management to this date. Wish to return to equipment sales again with sales management eventually in mind. Lots of experience, still young. PW-3716, Engineering News-Record.

CIVIL ENGINEER, 15 years experience in both Architectural & highway-railroad, water & sanitary. Now employed as Chief of Party on heavy construction. Desires permanently located position. PW-3725, Engineering News-Record.

CONSTRUCTION FOREMAN or Supt. experienced in all kinds of construction work. Buildings, roads, bridges etc. 25 years experience. PW-3666, Engineering News-Record.

PURCHASING AGENT, 43, with 7 years experience in CPFF Procurement, Traffic and Expediting. Just completing contract, available short notice, desires position with future. PW-3701, Engineering News-Record.

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POSITIONS WANTED

CHIEF PROPERTY accountant for foreign assignment. Experience includes six years government auditor reimbursement contractors, also five years foreign areas with companies, field and office. NY City resident. PW-3698, Engineering News-Record.

GENERAL SUPERINTENDENT or Resident project manager, available; qualified to take complete charge. Able Liaison, background, all phases of diverse contracts. Practical experiences. Organizer, mature-judgement, profit & cost-conscious in handling private, federal & public-works projects; includes bldgs. Large industrial plants & heavy construction operations. Mass & Rein. concrete, heavy earth & rock cut & fills, marine & land foundations, cofferdams, riverlocks, power plants & dams, R.R. relocation & grade separations, subways, bridges, highways, airports and misc. Facilities. References; PW-3668, Engineering News-Record.

SANITARY ENGINEER—11 years experience in water, sewage and industrial waste treatment, layout, design and supervision of construction. MS in CE, Reg. Prof. Eng. Age 36. Good references. Desires responsible position with future in industry or with consultant. PW-3664, Engineering News-Record.

GRADUATE CIVIL Engineer is currently employed by large steel plant. Experience includes 3 years design in steel and concrete. Seeks position with consulting engineer. Registered Engineer-In-Training. PW-3665, Engineering News-Record.

PURCHASING AGENT, 20 years commercial, industrial & heavy construction experience including accounting, material handling and control, expediting. PW-3677, Engineering News-Record.

SUPT. OF Construction age 35, 15 years experience in bldg. const. estimating & sub contractors. Will travel. PW-3691, Engineering News-Record.

CIVIL GRADUATE 28 years structural design detail and fabrication. Familiar with weldments and rigid frames. Open for responsible position with fabricator. PW-3680, 520 N. Michigan Ave., Chicago 11, Ill.

SELLING OPPORTUNITY WANTED

ARCHITECT — ENGINEERS — contractors — suppliers. Are you interested in the $2 billion program in Europe? American Engineers, internationally experienced, familiar with program, countries, and procedures, will represent you on contingent retainer basis. RA-3456, Engineering News-Record.

OPPORTUNITY IN CIVIL ENGINEERING AND SURVEYING

Engineer and land surveyor operating in large Rocky Mountain City must retire on account of health. Substantial amount of work in process. Desires to sell business, equipment and records. Approximately $25,000. Will finance part for reliable buyer and assist temporarily if desired.

BO-3724, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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1000-24	750-15 19.00	1600-20 275.00
1100-24	825-15 32.50	1600-24 375.00
1200-24	900-15 35.00	1800-24 395.00
1300-24	1000-15 32.00	
1400-24		
$35		

SUPER VALUE	COMBAT	TRUCK
Used	Equal to	used
1400x24 20 ply	17 ply	825-20 900-20 1000-22 1100-20 1100-24
	900-20	
65.00	45.00	32.00

32 YEARS OF TIRE EXPERIENCE

884 COMMONWEALTH AVE.
BOSTON LO 6-9620
DAILY 'TIL 6 P.M. - SAT. 2 P.M

Miscellaneous Equipment

FOR SALE

9	8300 La Plante Choate Motor Scrapers
2	8200 La Plante Choate Motor Scrapers
2	8300 Allis Chalmers Motor Scrapers
4	CR Le Tourneau Motor Scrapers
2	2C-800 Heiliners
1	Adams Traveloader
1	Barber-Greene Paver
1	Barber-Greene 848 Single Aggregate Central Plant
1	P & H Stabilizer
1	Ransome Paver, 34E Dual Drum
16	Cement Boxes

Also Caterpillar Dozers D6—D7—D8

ALL IN EXCELLENT CONDITION
CAN BE SEEN IN OPERATION

KENMAN CORPORATION
P.O. Box 43, Woodbridge, New Jersey

Notice to Advertisers

Because of the Labor Day Holiday, September 6th, the "Searchlight" pages of the

September 9th Issue of

Engineering News-Record

Close for press earlier than the usual weekly closing time.

The cooperation of advertisers is solicited in forwarding new copy, or changes of copy, to reach us accordingly.

FINAL CLOSING TIME
Display and Undisplayed Ads
Friday, August 27th

PROPOSALS
Thursday, September 2nd

STOCK SPECIALS

For Sale or Rent

1—P & H Model 855 Crawler Shovel, 2 yd. capacity. Cat Diesel power. Reconditioned. Crane boom available.

1—P & H 655B Crawler Crane, 1½ yd. capacity. Cat diesel. Late Model. Reconditioned.

1—P & H Model 700 Crawler mounted Crane, 1½ yd. capacity. Gas Power. Good all-around condition.

1—Bay City Model 65 Crawler Shovel 1¼ yd. Cummins diesel. Crane Boom available. Reconditioned.

1—Osgood 1 yd. Crawler Hoe & Crane, 50′ boom. Gas Power. Good Condition.

1—Bay City Model 42¾ yd. Crawler Hoe-Shovel-Crane. Thoroughly reconditioned. Gas Power.

1—Link Belt LS-71 Crawler Crane, ¾ yd. capacity, 45 ft. crane boom. Late model in excellent condition.

1—Link-Belt Speeder Model D-4 Crawler Crane, 40 ft. boom. Cat D-7700 diesel engine. Reconditioned.

1—Northwest Model 3 Crawler Shovel ¾ yd. Gas Power. Good running condition. Boom available.

1—Buckeye Model 70 ¾ yd. Crawler Hoe or Crane. Gas Power. Reconditioned.

1—Bay City Model 25, ½ yd. Crawler mounted hoe or shovel, gas power. Completely rebuilt.

1—Bay City Model 20, ⅜ yd. Crawler Shovel or Hoe, gas power. Rebuilt.

1—Bay City Tractor Shovel ⅜ yd. Capacity. Hoe, Shovel or Crane. Reconditioned.

1—Bay City Model 15A-T40, 12½ ton Cranemobile. Gas power. Factory carrier with 10—10:00 x 20 tires. 30 ft. crane boom. First class condition.

1—Lorain Moto Crane Model MC-4 on factory carrier — 11:00 x 20 tires. Gas power. In excellent operating condition.

1—Quickway Model E. Truck mounted Hoe or Shovel, 4/10 yd. 10 wheel carrier. Good condition.

1—Universal Truck Crane, 28 ft. boom, mounted on A.C. Mack Chassis. Single axle rear.

1—Bay City Model 65 or 650 shovel attachment with 1¼ yd. shovel dipper. Practically new.

Clamshell Buckets, ⅜ to 2 cu. yd., also several Crane Booms — Trench Hoes and Shovel Attachments — Assorted makes.

1—Heiliner Model 2C-500 11-13 yd. capacity. Cummins diesel. Excellent condition.

Check on what you may require.

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Walnut St. & B. & O. R. R.
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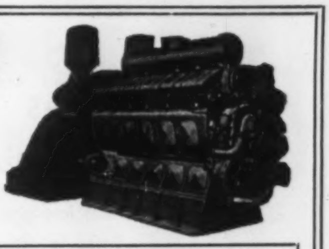
P. O. Box CHestnut 5-0200

DIESEL POWER



IMMEDIATE SHIPMENT
• PURCHASE OR RENTAL
UNIT CAPACITIES—10 TO 2475 KVA
A.C.—50 AND 60 CYCLES
• ALSO D.C. UNITS

A PARTIAL LISTING OF OUR INVENTORY

KW	Make	Model	HP	RPM	KW	Make	Model	HP	RPM
1180	Worthington	SEH-8	1685	360	400	Ingersoll-Rand	S-8	600	720
1136	Fairbanks Morse	38D	1600	720	350	Baldwin	VO-6	510	450
1100	General Motors	16-278A	1600	720	320	Enterprise	DSG-6	560	450
1000	General Motors	16-567B	1440	720	300	General Motors	8-268A	450	1200
750	General Motors	12-567	1080	720	200	General Motors	8-268A	350	900
700	Worthington	EE-8	1000	327	150	Worthington	CC-4	225	450
500	General Motors	8-278A	750	720	150	Ingersoll-Rand	S-4	225	600
500	General Motors	8-567	720	720	150	Buckeye	80	240	600
500	Alco	6-12½x13T	750	600	100	General Motors	3-268A	150	1200
400	Sterling	VDS-8	600	1200	60	General Motors	6-71	90	1200

A. G. SCHOONMAKER COMPANY, INC.

DIESEL DIVISION, 50 CHURCH ST., NEW YORK 7, N. Y.

LOCOMOTIVES

1—Plymouth—8 Ton 30″ Ga.—Gas.
1—Plymouth 8 Ton Gas. Std. Ga. #4095.
Whitcomb 65 T—Diesel Electric.
1—Brookville 3 Ton—Gas—24″ Ga.—#3042.
Whitcomb 40 Ton 36″ Ga. Diesel—#40175.

2—Brookville—12 Ton Std. Ga.—Diesel—New.
1—Plymouth 50 Ton Diesel Electric #4416.
Automatic Air Brakes & Couplers—BARGAINS

2—Conway Mod. 75 Muckers, #256 & #305.
64—New 42″ Steel Wheels Whitcomb 65 Ton Diesel-Elec. Cheap.
Bridgeford Axle Lathe.
Orton 30 Ton Diesel Locomotive Crane. Modern.
2—50 Ton Twin Hopper Cars.
1—Whiting Type B 35 Ton—Pit Drop Table—New.
Southwark 500 Ton Hyd. Press—Hi-Speed—Like New.
Birdsboro 400 Ton Wheel Press.

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SPEEDCRANES

LATE MODELS

Manitowoc Diesel Powered Speedcranes for rent. 25, 40 and 60 ton capacities with booms 100′ or more, 20′ and 30′ jibs. Special price on long rentals.

FORSYTHE EQUIPMENT CO., INC.

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Tel. STillwell 4-1030

FOR SALE or RENT

4	New Twin Screw Steel Tug Boats 38′ lg. Two 142 HP Engines.
4 yd	P & H 1055LC Diesel Crane-Dragline. 75 ton Cap. 120′ bm.
65 ton	Porter Diesel-Elec Locos new 1943. Reconditioned & Guaranteed.
25 ton	Orton Diesel Loco Crane. 1943.
10 ton	Unit No. 1020 Pneu Tired Crane.
30 ton	Industrial Brownhoist Gas Locomotive Crane. 70′ bm.
30 yd	Western & Koppel Air Dump Cars.
25 ton	Wiley Steel Stiffleg Derrick.
1200 CFM	Ing. Rand XRE, 200 HP Air Compr.
130 HP	Christian 2D Diesel Hoist.
60 ton	Clyde Elec. Revolver or Gantry.

MISSISSIPPI VALLEY EQUIPMENT CO.

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NEW AND REBUILT
STORAGE BATTERY

LOCOMOTIVES

1½ to 10 Ton — 18″ to 56″ Track Gauge
GREENSBURG MACHINE CO.
Greensburg, Penna.

FOR SALE or RENT

With Option to Purchase
Rebuilt—A1 Condition

48B Bucyrus Erie Shovel 2 cy diesel
Model 25 N. W. Shovel ¾ cy diesel
Caterpillar D8 Bulldozer
Shovel Front for Model 25 N.W.
6 wheel Mack Tractor 40 ton Rogers Low Boy

WILLIAMS CONSTRUCTION COMPANY

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CRAWLERS Capacities to 60 tons
Booms to 180 ft.
TRUCK CRANES Capacities to 35 tons
Booms to 130 ft.

P and H. Lima and Manitowoc.
Top-Condition erection cranes

ROGER SHERMAN

TRANSFER COMPANY
East Hartford, Connecticut JAckson 8-4106

LIQUIDATING ! ! !

• CATERPILLAR • TRACTORS

• D2 Traxcavator	$1,900.00
• D4 Traxcavator	$2,100.00
• D4 Bulldozer	$2,500.00
• D8 Bulldozer	$3,500.00

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PENINSULAR ENGINEERING & SALES, INC.

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New and Used material—Immediate delivery from stock Angles, Channels, I and WF Beams, especially for Contractors needs

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50 pcs	10" B P S	42#	48/60'
46 "	10" B P S	57#	40/67'6"
60 "	12" B P S	53#	60'
63 "	14" B P S	73#	60/75'

Phone or Wire your steel requirements

We are also interested in purchasing your surplus material.

We assure you our prices will be the best obtainable.

HY DRACHMAN STEEL CORP.

Warehouse
1423 34th Avenue, Astoria, New York
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Sales Office
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CYpress 9-5440

CRANES FOR SALE

One—P and H 955A 60 tons 140 ft. main boom

One—P and H 255A Truck Crane 80 ft. boom, 30 ft. jib

Two—P and H 150 Truck Cranes 50 ft. boom, 20 ft. jib

All modern and top condition. Used on Hook Work only. All with fine-control erection extras.

ROGER SHERMAN TRANSFER COMPANY
EAST HARTFORD, CONN.
JAckson 8-4105

FOR SALE

BARBER-GREENE

MIXALL

MODEL 804—FOR FULL RANGE OF HOT AND COLD BITUMINOUS MIXES

1—NEW MACHINE . . $3,900

1—SLIGHTLY USED . . $2,500

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EHRBAR EQUIP. CO.
Route 29, Union, N. J.

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SURPLUS NEW and USED For Sale or Rent

We do a Nation-Wide business in

STEEL SHEET PILING

IMMEDIATE SHIPMENT

1200 pcs. 72-16 ft. Carn. MP-101—West Coast
428 pcs. 60-50 ft. M-116 & M-115—Illinois
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280 pcs. 35-30 ft. Inland 1-27—Mississippi
218 pcs. 30 ft. Carn. M-116—Iowa
180 pcs. 32-28 ft. Inland 1-23—Georgia
113 pcs. 20 ft. Carn. M-116—South Carolina

Other lengths & sections used & new at other locations in United States

We have Nation-wide reputation for effecting QUICKEST SHIPMENTS

All sizes Vulcan & McKiernan Pile Hammers & Extractors for rent—Shop Rebuilt

Regardless of location of job. Wire, Write, or Phone

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RENT STEEL SHEET PILING

"FASTER from FOSTER"

Get the exact lengths and sections you need from Foster—all standard makes, delivered *on time*—and at Foster's standard low rental rates. Also Rental Pile Hammers & Extractors.

L. B. FOSTER CO.
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STEEL SHEET PILING

600—Pcs. M-116 in 40 to 60'—Chicago
130—Pcs. M-115 in 50 to 60'—Chicago
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300—Pcs. M-116 in 50 to 60'—Kansas City
100—Pcs. M-115 in 50' —Kansas City
105—Pcs. M-112 in 60' —Kansas City
83—Pcs. M-112 in 25 to 50'—North Dakota
100—Pcs. I-23 in 12 to 16'—Illinois
86—Pcs. M-116 in 29 to 30'—Southern Illinois
49—Pcs. I-22 in 30' —Wisconsin

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CONTRACTORS MACHINERY CO.
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400 PCS. ALGOMA B6—30 FT. IN QUEBEC
1400 PCS. CARNEGIE MP101, 38 TO 55 FT. KY.
892 PCS. BETH. DP-2—22-40-45-60 FT. N. Y.
454 PCS. BETH. AP-3—15, 20, 50 & 60 FT. N. Y.
S-5 McK. TERRY HAMMER, SAND DRAIN.
60 FT. LATTICED CRANE BOOM $500
12x14 AMER. 3 DRUM STEAM HOIST
7x8 AMERICAN STEAM SWINGER

STANHOPE, 60 E. 42nd St., N. Y. 17, N. Y.

When you need PILING . . . fast

use this section, as many contractors do, as a piling buying directory. It can save you time when you want to know, quickly, where to buy good new or used piling.

For Sale—Highest Bidder

USED EQUIPMENT

LOCATED OAK RIDGE, TENNESSEE

Closing Date—September 28, 1954

1 each—CRANE, Lima Crawler, Model #802, w/90' Boom, w/shovel attachment, 2 Cu. Yd.

1 each—CRANE, Lorain Crawler, Model #80, w/shovel attachment, 1¾ Cu. Yd., w/50' Boom.

1 each—CRANE, Lorain Crawler, Model #78, w/85' Boom, w/20' Jib Boom, Backhoe Attachment, 1½ Cu. Yd.

4 each—LIGHT PLANTS, Empire, 5 KW output, Model #24.

2 each—CLAMSHELL BUCKETS, Owens, Model #S, 1¼ Cu. Yd. Cap.

5 each—CONCRETE BUCKETS, Johnson, Model #325, 1 Cu. Yd. Cap.

1 each—COMPRESSOR, Gardner-Denver, Model #ACB—77S, Shop Type, w/Century Electric Motor.

1 each—PUMP, Water, Carter Model #10MCW, 2", w/Wisconsin Engine, Model AKN.

1 each—PUMP, CH&E Double Diaphragm, 4", w/Wisconsin Engine, mounted on 4 rubber tires.

1 each—BOILER, Vertical Fire Tube, Schwab Boiler and Machine Co., Oil Injection Fired, skid mounted, operating pressure 100 lbs./sq. in.

For particulars contact Purchasing Agent,

MAXON CONST. COMPANY, Inc.
Post Office Box "S", Oak Ridge, Tennessee
Telephone 5-3542
Station 254

Advertisement of Sale of Excess

TUNNEL SUPPORT STEEL

The West Virginia Turnpike Commission proposes to sell at the storage site, excess Tunnel Support Steel that was purchased for construction of the Tunnel on the West Virginia Turnpike.

The following items are offered for sale:

	Approximate Quantity
Roof Bolts and Accessories—Unused	12 Tons
Lagging for Roof Bolts—Unused	13 Tons
Tunnel Lagging—Unused	4 Tons
Tunnel Lagging—Used	43 Tons
Tie Roads—Unused	5 Tons
Lagging Clamp— 500 each Unused 2,000 each Used	4 Tons
Tunnel Ribs—Unused	3 Tons
Bolts & Nuts—Used	1 Ton
Scrap Steel	6 Tons

Proposals will be received by the West Virginia Turnpike Commission until 2:00 P.M. Eastern Standard Time, August 26, 1954, at the office of Howard, Needles, Tammen and Bergendoff, 804 Greenbrier Street, Post Office Box 5266—Capitol Station, Charleston, West Virginia.

All steel is stacked accessible to truck loading on a level construction road in good condition about six hundred (600) feet from State Route No. 83 near the Village of Standard, West Virginia. Prospective buyers may see and inspect the steel at the site.

Proposal forms and detailed description including size, condition and quantity of each item will be furnished upon request to Howard, Needles, Tammen and Bergendoff, 804 Greenbrier Street, Charleston, West Virginia. Mailing address: Post Office Box 5266, Capitol Station, Charleston, West Virginia.

Proposals must be made on the proposal forms furnished by the Commission in the manner designated on the forms and must be received at the place designated above on or before the day and hour named.

West Virginia Turnpike Commission

William G. Sathers
Vice-Chairman

August, 1954

PILE DRIVING EQUIPMENT

Vulcan and McKiernan-Terry

Steam Pile Hammers and Extractors

Drop Hammers - Driving Caps

Steel Leads - Pile Driver Hose

Hoists and Boilers

CONTRACTORS MACHINERY CO.

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VAlentine 4740

2637 SOUTHWEST BLVD
KANSAS CITY 8 MO

MISCELLANEOUS EQUIPMENT

2—Ingersoll-Rand Wagon Drills
2—15 ton Fruehauf Flat Bed Semi Trailers
2—Diamond T Tractors
1—D-8 Bulldozer
1—Euclid 8 cubic yard End Dump Trucks
1—National Vertical 40 H.P. Boiler
1—Erie Horizontal 80 H.P. Boiler
All boilers are equipped with oil burners

Subject to prior sale

FRAZIER-DAVIS CONSTRUCTION COMPANY

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EQUIPMENT FOR SALE AT ATTRACTIVE PRICES

All in excellent condition

2—Northwest Model 6 Crane/Draglines
2—Northwest Model 25 Crane/Draglines
1—P & H Model 255 Crane/Dragline
1—Link Belt Model 75 Crane/Dragline
1—Koehring Model 304 Crane/Dragline with Backhoe Attachment
9—Euclid 22-ton End Dump Trucks powered with Cummins 275 H. P. Diesel Engines
3—Gar Wood Model 625 25-yard Scrapers
5—A-C Model 300 Motor Scrapers
5—Euclid Single Engine Scrapers
A-C HD-20 Tractors with Push Plates and Dozers
CAT D-4 and D-6 Front End Shovels with Cable Control
CAT D-7 and D-8 Tractors

Contact us for complete details.
OFFERED subject to PRIOR SALE

FEHRS TRACTOR & EQUIPMENT COMPANY

1809-11 Cumming Street,
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Telephone—Atlantic 3127

FOR SALE

BUCYRUS 375 DRAGLINE

WARD LEONARD CONTROLS
150' Boom—9-½ Yard Dragline Bucket
—Good Condition

FORSYTHE EQUIPMENT CO., INC.
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CRUSHING PLANT

1—Cedar Rapids "Morok" three unit portable, 150 to 200 tons capacity, includes 25" x 40" primary jaw crusher, 10" x 36" secondary jaw crusher, and 40" x 20" smooth crushing rolls, both mounted on separate trailers. Sizing unit, which includes a 60-ton 3-compartment storage bin. Plant is powered with enclosed dustproof motors for electric operation and also includes two-200 HP Cummins power units in case diesel operation is desired. Return, delivery and main conveyors included ....$35,000.

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Phone: Plaza 6-0300, Ext. 125

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FOR IMMEDIATE DELIVERY

AIR COMPRESSORS

2—NEW, I. R., 3580 CFM @ 110 PSI

PURCHASED NEW SEPT., 1952—NEVER INSTALLED

OFFERED AT A SUBSTANTIAL SAVINGS

2—30 & 18 x 22, I.R., Type PRE-2 Compressors, 5-step control, 200 RPM, with direct connected G.E. Synchronous Motors 600 HP, 3/60/4160 unity P. F., G. E. full voltage magnetic controllers, 10 KW, M. G. Sets for excitation, aftercoolers, and automatic condensate traps.

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12—304 HP Kewanee Firebox Boilers, Model 590, 125 PSI, with oil burners & spot blowers, ASME.
4—150 HP Casey Hedges HRT Boilers, 150 PSI, gas fired, ASME.

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CAPACITY 3 TO 20 TONS
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LABOR REDUCTION

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FOR RENT OR SALE MANITOWOC CRANES

Models 2000-B or 3500—25 T. to 60 Ton Capacity—50' to 125' booms—20' or 30' jibs—manual controls — independent booms —torque converters.

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AMERICAN AIR of JERSEY

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GAS • DIESEL • STEAM • ELECTRIC

NEW AND QUALITY REBUILTS

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55 CFM	Lindsay (GAS)
60 CFM	LeRoi—CPT—Worth (GAS)
105 CFM	Joy—Worth—CPT (GAS)
160 CFM	Worthington (GAS)
210 CFM	Worthington (GAS & DIESEL)
270 CFM	Sullivan w/Buda Power Unit—Skids
315 CFM	Worthington (GAS & DIESEL)
500 CFM	Worthington (DIESEL)
600 CFM	Worthington (DIESEL)

STATIONARY

80 CFM	6 x 5 Worthington HB—10 HP Elec
122 CFM	7 x 7 Worthington HB—20 HP Elec
165 CFM	60 PSI 8 x 7 CPT-TB
168 CFM	135 PSI 8 x 9 CPT-TB
211 CFM	9 x 9 Ingersoll—ES-1—40 HP Elec
294 CFM	125 PSI 10 x 11 Worth-HB
364 CFM	20 PSI 12 x 7 Gardner Denver
368 CFM	100 PSI 12 x 10 IR-ERI
905 CFM	55 PSI 17 x 13 CPT-TB
1085 CFM	35 PSI 20 x 12 Pennsylvania
1452 CFM	70 PSI 15/15 x 14 Penn Duplex

MANY OTHERS TO CHOOSE FROM

AFTERCOOLERS—AIR RECEIVERS

VACUUM PUMPS

354 CFM	14 x 5 Penn—15 HP
434 CFM	14 x 7 Ingersoll 15-20 HP
720 CFM	18 x 7 Worthington 25-30 HP
1184 CFM	22 x 9 Chicago 40-50 HP
1633 CFM	24 x 11 Chicago 60 HP

American
AIR COMPRESSOR CORP
DELL AVE. & 48th ST. NORTH BERGEN, N. J.
Telephone UNion 5-4848

A RELIABLE PLACE TO BUY USED NORTHWEST MACHINES

HODGE & HAMMOND, INC.

Northwest Distributor for 21 years
720 Garrison Ave., Bronx, N. Y. City
Phone: Kilpatrick 2-2400

CARE TO TRY A LITTLE BARTER?

We have to offer:

1—LeTourneau Model D Roadster 8-10 yard self-propelled scraper with Cummins Diesel engine and excellent rubber........................ **$7500.00**
1—Caterpillar D-4 Crawler with Bros Hydraulic Angledozer. Very good all around condition........................ **$4800.00**
1—International TD-9 Crawler with Bucyrus-Erie Angledozer. Ready to work **$4200.00**
1—Northwest half-yard Crawler Crane-Dragline with gas power........... **$3900.00**

We would rather have:

Cash and/or late model Allis-Chalmers Crawler Tractors or Scrapers.

FRANTZ EQUIPMENT COMPANY
50th & Wynnefield Avenue **Philadelphia 31, Pennsylvania**
GReenwood 7-7200

FOR SALE

2—Used Buffalo-Springfield 3 Axle Tandem Rollers—Models KX-16, 9 to 14 Ton. Serial No's 22712 and 22713—Both machines in good working condition—Priced to sell. Immediate Delivery.

WRITE OR WIRE DEPT. EN-2 . . .
OR PHONE HARNEY 8733

Subject to Prior Sale

FUCHS-CLAYTON MACHINERY COMPANY
901 So. 40th Street **Omaha, Nebraska**

This equipment priced right and in good shape to be sold as is, where is

1 P & H Crane, Model 6558, w/counterweights, 70' boom, 25' jib, boom stops, high gantry. Fair leads and tagline. Available now.
1 D-6 Cat. #8030, w/hyster. Model 24, cable control unit, serial 51356, angle dozer, serial A18259-8K.G.A. Completely overhauled. Available now.
1 TD-6 International Crawler Tractor 30" wide tread w/bucyrus erie 6WG-2 yd. bull grader w/front pump, serial no. 29853 w/1 set rubber pads for tracks. Available December 15, 1954 (approximately).
1 TD-9 International Diesel Crawler Tractor w/bucyrus erie, model 9DSNS dozer shovel w/1 cu. yd. 75" wide bucket w/teeth. Available December 15, 1954 (approximately).
1 Koehring Model 605 Diesel Crawler Crane, serial C-5725 w/80' boom, 10' jib tagline and accessories. Available December 15, 1954 (approximately).
1 Compressor Worthington 500 CFM, serial no. 104473. Available December 15, 1954 (approximately).

DONOVAN-KEHNE-FOLEY
P. O. Box 687 **Paducah, Kentucky**
Telephone 56311, Ext. 8510.

CRANES

1—2 cubic yard Lima Combination Crane and Shovel with 100 foot boom plus 25 foot jib.
1—1½ cubic yard Northwest Crane.

Subject to prior sale

FRAZIER-DAVIS CONSTRUCTION CO.
1319 Macklind Avenue, St. Louis, Mo.
STerling 1950
Box 188 **Grahamsville, New York**
Grahamsville 2861

5—LaPlante-Choate Motor Scrapers, Model T.S. 300. Priced at $14,000.00 each.
1—Tournadozer equipped with G.M. Diesel and Torque converter. $12,000.00.
1—L. B. Littleford steam generator 3,000 gallon capacity, and trailer. $5,000.00.
All of the above machines are in excellent condition and are about three years old.

VILBRO EQUIPMENT COMPANY
233 North Ave. **Westfield, N. J.**

UNIVERSAL FORM PANELS FOR SALE

New Style, Good Condition

WALSH-PERINI-GROVES-SLATTERY COS.
122 East 42 Street **New York 17, N. Y.**
Phone: Oxford 7-1540

FOR SALE

A PARSONS #4 TRENCH MACHINE

DIGS 15 FT. DEEP 36 IN. WIDE
EXCELLENT CONDITION

JOSEPH VENTRELLA
831 WEST TAYLOR **CHICAGO 7, ILL.**
HAYMARKET 1-4178

CRANES—ATTACHMENT—BUCKETS

Several Used Late Model 6 Northwest 1½ yd. Cranes
Used Model 6 Shovel Attachment
Several Used Clamshell Buckets

HODGE & HAMMOND, INC.
720 Garrison Ave. **Bronx, N. Y. City**
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REDESIGNED PAVER FINISHER minimized traffic delays in resurfacing Liberty Tubes linking busy Pittsburgh areas.

Redesigned paver finisher speeds tunnel job

Early in 1954 the Blaw-Knox Company purchased the All Purpose Spreader Company and acquired in the deal the rights to the Apsco PF-90—a rubber-tired paver finisher that promised real advantages. Retaining the basic ideas, B-K's Foote Construction Equipment Div. rebuilt the machine to such an extent that it can now be considered new equipment.

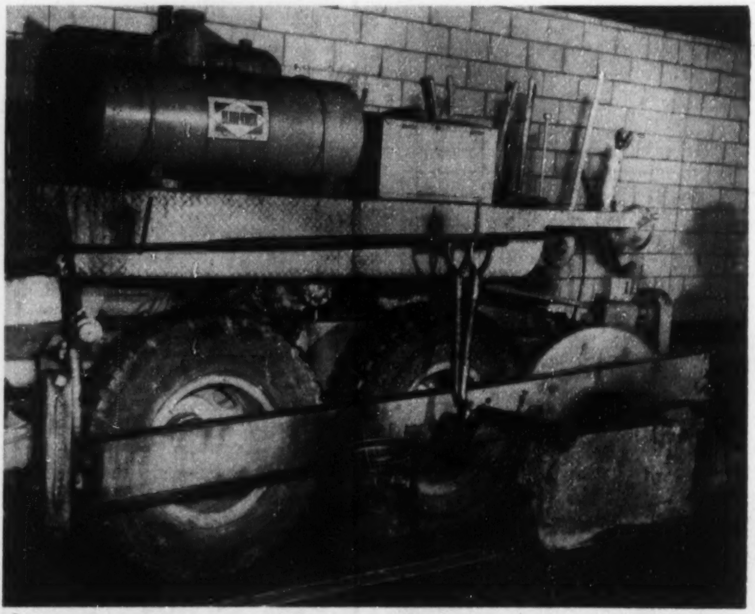
Some new advantages were displayed when the paver finisher was used to resurface the roadway in the Liberty Tubes connecting the Pittsburgh South Hills area with the Golden Triangle business district. The unit operates in a speed range of 15 to 54 fpm so that it was possible to complete the job with a minimum of discomfort to motorists. Work on the 6,000-ft inbound tube was completed in two night shifts running from approximately 11 pm to 6 am.

The paving material was laid in two 11-ft widths, 1-in. thick to cover the existing concrete previously topped with a 2-in. thickness of binder asphalt. Approximately 740 tons of Alabama lime rock asphalt were used.

Biggest feature on the new machine—as it was on the previous model—is the use of rubber tires instead of metal crawler pads. According to the manufacturer, the use of rubber prevents spin, weaving or side-slip in making turns and in other steering operations. Brakes are provided on each side of the rear wheels to aid in steering where turning in a short radius is required.

Further, the use of the rubber mounting reportedly dampens the shock from the vibrating tampers and relieves strain on structural

(Continued on page 80)

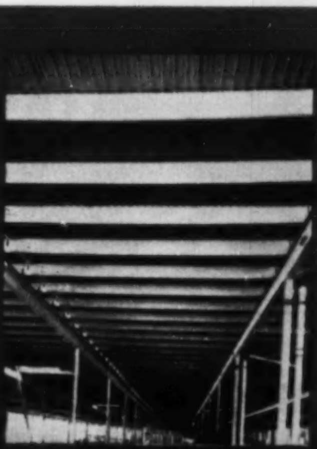


RUBBER MOUNTING eases shock on frame transmitted by vibrating tampers.

J&L Junior Beams prove economical, adaptable

see our catalog in SWEET'S

at Orgill Brothers $2,000,000 warehouse



Five hundred and fifty tons of J&L Junior Beam roof purlins have been specified for Orgill Brothers new $2,000,000 wholesale hardware warehouse in Memphis, Tenn. Both architect and contractor agree that Junior Beams enabled them to save money on this 14-acre project and complete the job on schedule.

Architects W. C. Jones and W. C. Jones, Jr., chose Junior Beams because their physical characteristics permitted greater economy in design, allowed more head room, better clearance and thus provided a better stabilized building. In addition Junior Beam's light weight made for fast, easy handling during construction, as well as during hauling to the building site.

Clinton J. Wagner, Vice President of S&W Construction Company, contractors on the job, reported that "we found Junior Beams to be adaptable and economical for this type of construction. Deliveries were satisfactory and well ahead of schedule. This was a great factor in enabling us to complete the project on time."

Additional savings were outlined by B. S. Merrill, structural engineer for the architects. He said, "we had 6500 sprinklers to install and the use of Junior Beams effected considerable savings . . . I would estimate we would have had to put in 10 to 20 percent more heads if we had used some other joist and at $20.00 a head you can see what we saved."

Take a tip from the men who built Orgill Brothers Warehouse, Junior Beams are adaptable, rigid, shrinkproof, fire resistant, vermin-proof, and impervious to termites. Write for more information today. Our new booklet, *J&L Junior Beams*, shows how these modern structurals are being used as floor joists and roof purlins, with loading and spacing tables for various spans.

J&L STEEL

Jones & Laughlin

STEEL CORPORATION — *Pittsburgh*

parts. It can also be driven over new paving without damaging the surface.

A brand new feature of the unit is the screed. Hydraulic rams enable the operator to lift the screed instantly as desired. An electrically started blower-type heater eliminates the danger and bother connected with flaming oil-soaked rags.

Among the other changes wrought by B-K are: an improved control panel for the screed operator; adjustable front bumper rolls to provide for various types and sizes of dump trucks; auger size increased from 10 to 14 in.; completely redesigned front wheels and steering knuckles; gasoline and oil tanks enlarged to carry a full day's supply of fuel.

The receiving hopper has a full 4-yd capacity to release trucks faster. Located in the base of the hopper, and operated separately or in unison, are chain-driven bar type conveyors. These move the material through the hopper and discharge it ahead of the screed. Flow control is provided through manually-controlled gates near the discharge end of the hopper.

Courses can be laid in widths from 8 to 13 ft and in depths up to 10 in. BLAW-KNOX CO., FOOTE CONSTRUCTION EQUIPMENT DIV., NUNDA, N. Y.

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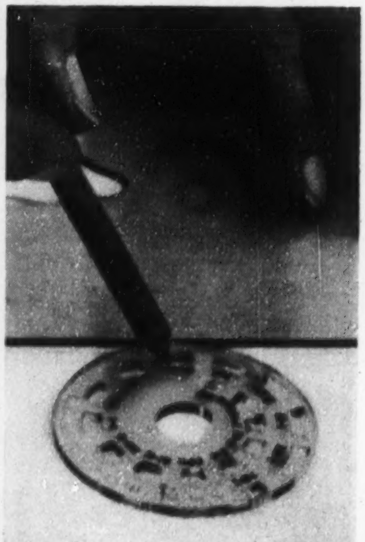
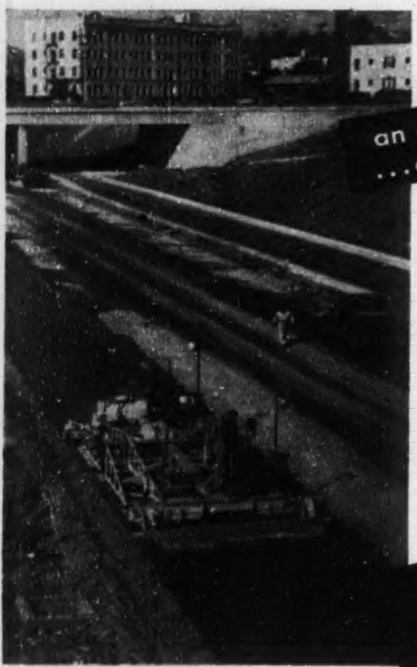
A small slotted plastic disc can be used to simplify the tedious job of measurement when drawing parallel lines for layout, drawing, lettering or

(*Continued on page 83*)





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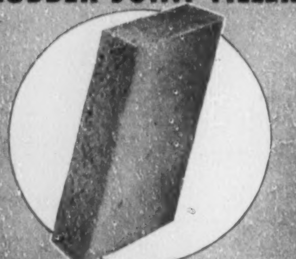

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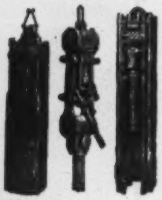

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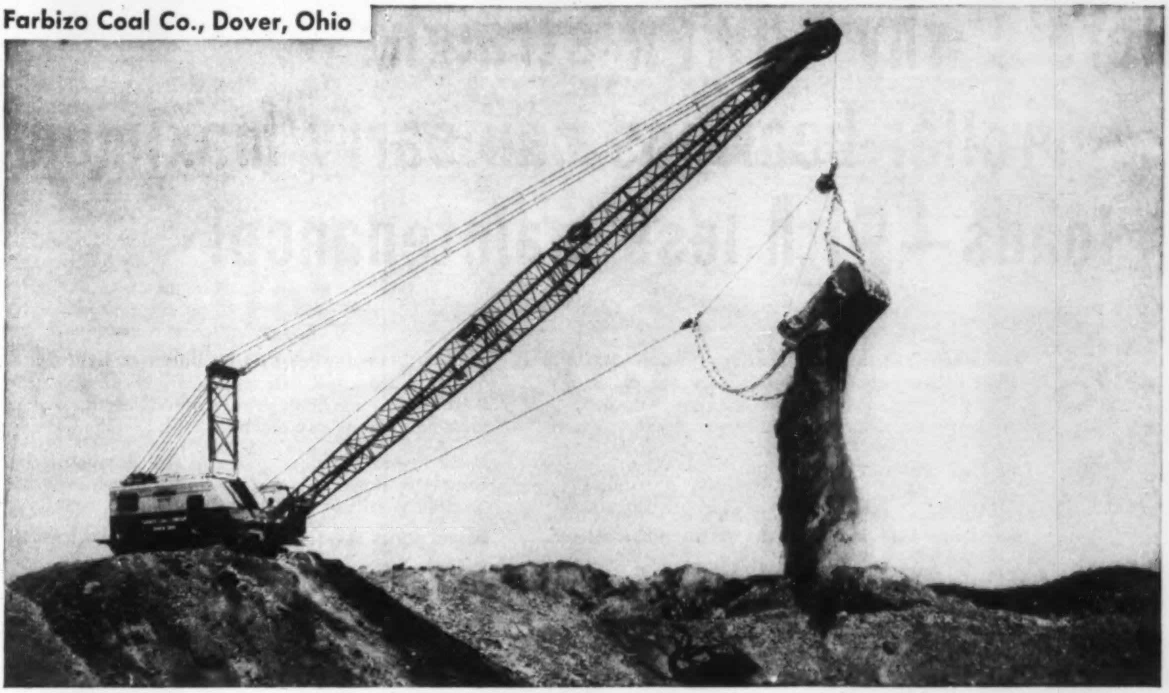

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IN THEIR TD 24 BULLDOZER TOO, Farbizo relies on heavy duty, high detergent Cities Service DC-300 oil. Heat-resistant, long-lasting and free-flowing DC-300 does the finest job possible.

Twin G. M. C. Diesels in Marion Shovel Give Outstanding Performance!

Here's the story from the Farbizo Coal Co.:

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"Oil consumption 1 pint per week, oil and filters changed weekly. Consumption is same as when shovel was new. Motors were recently inspected but no repairs or replacements needed. Unusual performance praised by G.M.C. and Marion Shovel representatives.

"Similar results using DC-300 Oil in two Gradall shovels and International TD 24 Bulldozer."

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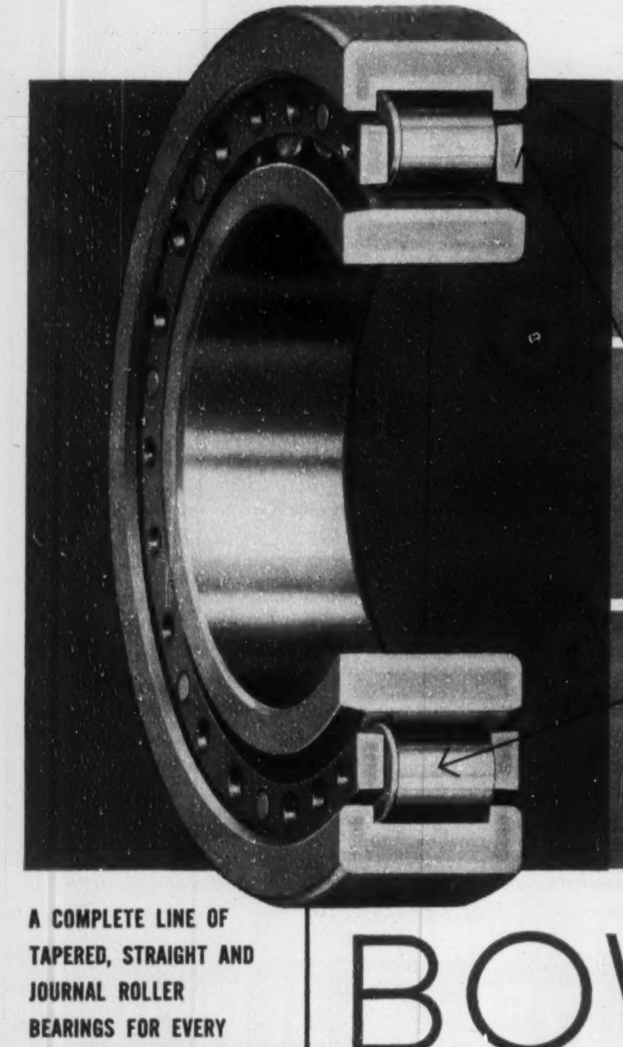
Here's why BOWER straight roller bearings can carry maximum loads—with less maintenance!

The important design features of Bower straight roller bearings shown on this page are just a few of the reasons why these bearings will operate efficiently and economically in your product. Consider these facts, too. Bower straight roller bearings incorporate highest quality materials and workmanship. They have proved themselves capable of standing up day in and day out under maximum loads—with little or no maintenance.

In fact, this is the reason why Bower straight roller bearings are used extensively by leading manufacturers in such fields as automotive, earthmoving, farm equipment and machine tool.

Let a Bower engineer give you full details of the complete Bower line. Call him in while your product is still in the blueprint stage.

BOWER ROLLER BEARING COMPANY • DETROIT 14, MICHIGAN



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cross-hatching. Called the Linemaster, the tool is perforated with 17 slots that can be used to produce parallel lines 1/64 in. apart and 1/32 to 1/2 in. in 1/32 in. graduations. According to the manufacturer, each slot is precisely located in relation to the circumference of the disc to within 0.002 in. of the dimension marked on it.

In use, the Linemaster is placed against a straightedge or curve. The pencil or scriber point is inserted in the proper slot and a line drawn. Positioning is automatic.

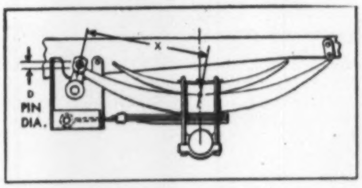
For cross-hatching, a succession of regularly spaced lines may be drawn by using each slot in succession. The Linemaster is made of transparent plastic and is 2¼ in. in dia. Retail price is $1.00. Dri-flo, 642 E. Ten-Mile Rd., Hazel Park, Mich.

Radius arms reduce spring leaf, center bolt breakage

A new devise is reported to transmit all braking and starting forces directly from the truck axle to the frame thereby leaving the springs to do the cushioning job for which they are primarily intended. The result is said to be elimination of the forces that wind up springs, break center bolts and fatigue and break leaves.

According to the manufacturer, the radius arms perform this task in a direct and trouble-free manner. Basis for the claim is in the patented large-diameter dowel that seats on the axle pad and receives the bottom end of the center bolt and at the same time provides the connection to the radius arm. It is pointed out that this type of connection protects the center bolt

(*Continued on page 84*)



X	D	W	Kit No.
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22½, 25, or 27	1	2½	2
22½, 26, or 28	⅞	2½	3
22½, 26, or 28	1	2½	4
22½, 25, or 27	1	3	5
22½, 26, or 28	1	3	6
22½, 25, or 27	1⅛	3	7
22½, 26, or 28	1⅛	3	8
22½, 25, or 27	1¼	3	9
22½, 26, or 28	1¼	3	10

Figures Tell the Story about the Low Maintenance Costs with DORR CLARIFIERS

...and the Baltimore Sewage Treatment Plant is a typical Case In Point...

16 years ago the Baltimore Department of Public Works installed its first two center-drive Dorr Clarifiers. Since then, 4 additional units have been added. The figures below tell the actual repair costs story. They are not "exceptions to the rule" but are typical of the low maintenance costs of Dorr Clarifiers reported by city after city.

Maintenance costs are one of the primary factors upon which Clarifier excellence should be judged. Are you getting the best?

We'd like to tell you how Dorr Clarifiers stack up on performance too. Ask a Dorr Engineer for the facts.

Here are the Repair Cost Facts

Number of Units	Size of Clarifiers	Years of Operation	Repair Parts Cost*			Repairs as % of	
			Total	Per Unit	Per Unit Per Year	Original Cost	Original Cost Per Year
2	170 ft. Diameter	16	$241.40	$120.70	$7.55	1.08	0.068
1	170 ft. Diameter	15	no repair costs to date				
2	126 ft. Diameter	14	168.20	84.10	6.01	0.95	0.068
1	170 ft. Diameter	3	no repair costs to date				

*includes modest unsegregated labor costs

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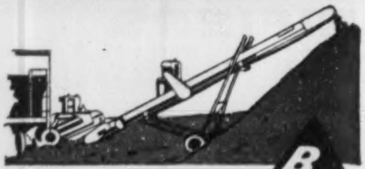
Subsidiary—Barium Steel Corporation



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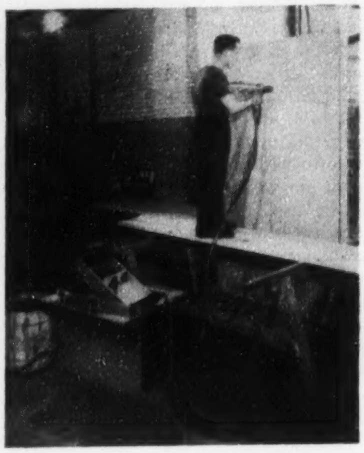
and simplifies installation—spring leaves do not have to be disassembled.

The radius arm itself is composed of three spring leaves of varying lengths held together with spring clips. The center or main leaf has an eye in its forward end fitted with a rubber-loaded bronze bushing. This bushing, which fits over the frame bracket pin, allows the usual up and down and lateral motion plus a radial motion without corner loading bearing surfaces.

The kits include frame brackets that provide for attachment of the radius arms at any one of five points, depending on the distance from axle to bracket and are designed for installation on all makes of trucks. Price of kits—$117 f.o.b. Buffalo plus tax. Truck Equipment Co., 1791 Fillmore Ave., Buffalo 14, N. Y.

Portable nail driver has automatic hopper feed

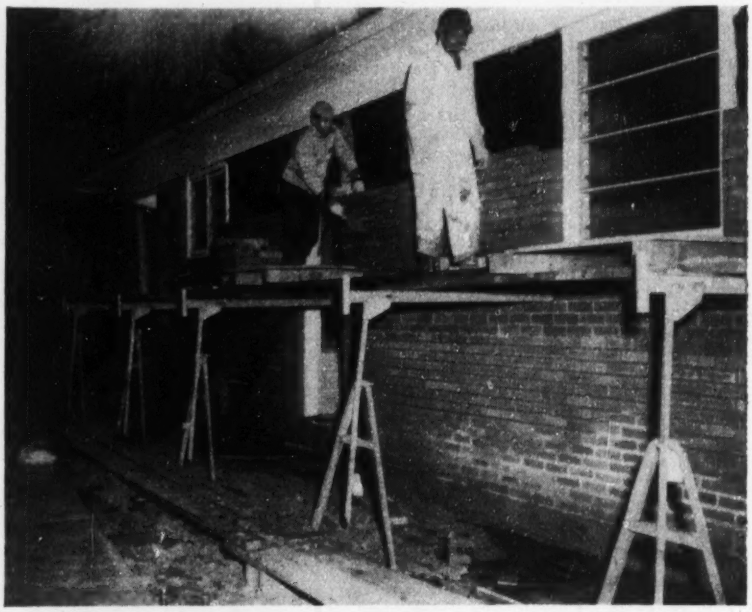
A portable nail driver with an automatic hopper feed is said to sink each nail completely with a single stroke of its pneumatic driver. Use of the nail driver reportedly enables an operator to drive 40 to 50 nails per minute.



The machine operates on compressed air and requires 14.7 cfm at 80 to 90 lb psi. The feeding unit weighs 65 lb and is connected by a plastic hose to the 8½-lb driving unit. A standard air hose supplies compressed air to the feeding unit.

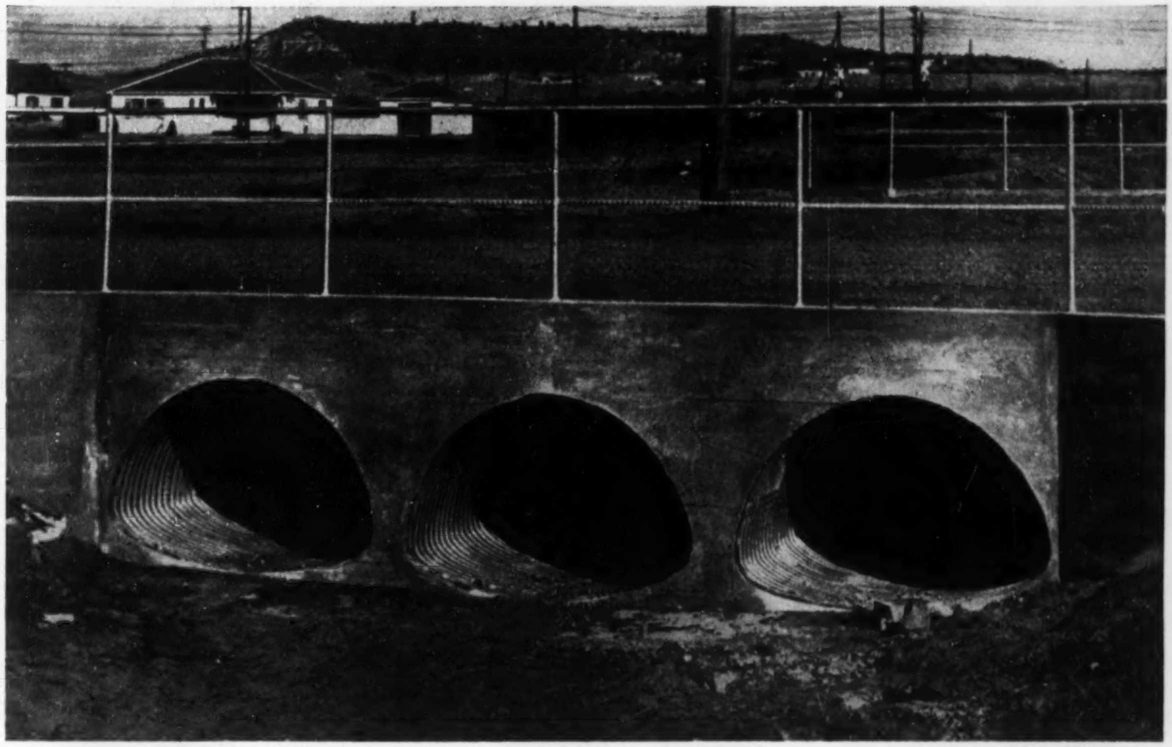
Nails used in the unit may range from 4 d to 8 d in size. They are aligned and fed by an air-driven oscil-

(*Continued on page 86*)



Putlog trestles save erection time

New putlog trestles are all steel and have nine height adjustments from 4 to 6 ft. The putlogs are set on the top course and bricks or blocks laid over them until maximum working height is reached. Masons then pull the putlogs from the wall and readjust the height to the new convenient level. When a pin is removed, the putlog folds flat for storage or shipping. The trestle is 5 ft long and weighs 47 lb. The Patent Scaffolding Co., Inc., 2 38-21 12th St., L. I. C. 1, N. Y.



TONCAN CORRUGATED METAL ARCH-PIPE

provides fast run-off in shallow drainage areas

When low headroom and shallow fills restrict use of full round pipe you can still provide for fast run-off with Toncan Corrugated Metal Arch-Pipe.

Its low, wide arch carries a greater volume of water under normal depths of flow than full round pipe of equivalent size and cost. The water level is held low. Ponding is eliminated.

Toncan Corrugated Metal Arch-Pipe offers you these additional advantages in shallow fill areas. It has the strength to support heavy loads. It is flexible to resist shock and vibration from overhead traffic. It is unaffected by severe weather changes or shifting soils. It is easily installed in any weather with unskilled labor.

These low-cost drainage structures are available in Republic Copper Steel, or in Republic Toncan Iron which offers the highest rust-resistance of any ferrous metal in its price class.

Contact one of the Toncan Drainage Products Manufacturers listed below for "specs" and engineering data on all types of Toncan Drainage Products. Or write to:

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

Toncan Drainage Products are made from Republic Toncan Iron and Republic Copper Steel

Corrugated Metal Pipe • Perforated Corrugated Metal Pipe • Sectional Plate Pipe • Sectional Plate Arches • Corrugated Metal Arch-Pipe • Sectional Plate Arch-Pipe • CorWel Subdrainage Pipe • Asphalt Coated Pipe • Asphalt Coated and Paved Pipe.

Call the Toncan Man that's your best drainage plan
TONCAN

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lating hopper with a capacity of 8 lb of nails.

The driving mechanism is contained in a gun-like barrel and is operated by depressing the barrel against the work and pulling the trigger. A safety device prevents pulling the trigger unless the barrel is fully depressed. It can be operated in any position and there is no recoil. Standard distance between driver and feed mechanism is 25 ft but a 50-ft hose may be used. MORGAN MACHINE CO., 1230 UNIVERSITY AVE., ROCHESTER 10, N. Y.

Concrete test cylinders cured inexpensively

An inexpensive method for curing concrete test cylinders in the field under controlled humidity and temperature conditions has been recently developed. With the new method, the test cylinders are placed in a metal curing can that is lined with a thick layer of cellulose sponge. When wet, this inner liner is said to permit the absorption of 2 to 4 qt of water with a 60% retention at seven days. A special gasket provides a complete seal when the top is in place.

With this equipment, the test cylinders are surrounded by adequate humidity for proper curing and temperatures are kept in a moderate range. E. W. ZIMMERMAN, 228 N. LASALLE ST., CHICAGO, ILL.

Wall tie and mortar trough speed cavity wall erection

The Rock-Fast cavity wall tie spreads and ties parallel masonry walls much the same as a spreader-tie works on concrete forms. The ties are manufactured of galvanized steel, copper weld steel alloy, zinc and other nonferrous metals—$\frac{3}{16}$ and $\frac{1}{4}$ in. diameters are available.

Each tie has a 3-in. wing at either end that lies in the horizontal mortar bed. The 6 or 8-in. stem is formed with a center dip to provide a spacer that automatically aligns the walls at the proper separation distance. This 2-in. spacer section is also designed to permit moisture to drip from the tie.

A companion piece with the ties is a metal trough that hangs between the walls during bricklaying operations to catch extra mortar and prevent the formation of bridges. The troughs are made in 36-in. lengths and are suspended by 30-in. wire hangers. As work progresses, the trough is moved upward and in so doing scrapes excess mortar from inside the wall. CONVER STEEL & WIRE CORP., 600 E. 132ND ST., NEW YORK 54, N. Y.

GM DIESEL
CASE HISTORY NO. 5312-118

USER: Macco Corporation, Paramount, California.

INSTALLATION: GM Diesel-powered Ingersoll-Rand and Chicago Pneumatic rotary compressors supply air for Guniting riverbanks and earthquake-damaged building walls.

PERFORMANCE: Macco has standardized on GM Diesel-powered rotary compressors. Charles D. Dutro, Superintendent of Guniting Construction, reports steadier air, more positive pressure, gets 25% more work done than with other compressors. No repairs since units were installed more than a year ago.

It pays to STANDARDIZE on
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GM
GENERAL MOTORS
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POWER

"25% more work done"

with GM Diesel-powered Rotary Compressors

25% more work done per shift—steadier, more positive pressure—high portability—these are some of the reasons why Macco Corporation has standardized on General Motors Diesel-powered rotary compressors for their Guniting work. They report smoother operation and faster, easier moves.

Quick-acting GM 2-cycle Diesels pack more power in less space, so for building jobs Macco mounts the compressors on light trucks for faster trips. In intermittent compressor operation—and in every other kind of work—precision unit fuel injectors keep fuel consumption down. Contractors tell us that GM Diesels run for years without overhaul, but when parts and service *are* needed they are always quickly available.

More and more contractors are standardizing on modern rotary compressors designed around quick-accelerating GM 2-cycle Diesel engines. For more details on GM Diesel-powered compressors for your job, call your nearest distributor or write:

DETROIT DIESEL ENGINE DIVISION
GENERAL MOTORS • DETROIT 28, MICHIGAN
Single Engines... 30 to 300 H.P. Multiple Units... Up to 864 H.P.

EDITORIALS

Subsidizing the St. Lawrence Seaway

Much has been written in recent years about the proper allocation of costs on multiple-purpose river-development projects. Only recently the three principal federal agencies doing such work—the Bureau of Reclamation, Corps of Engineers, and Federal Power Commission—adopted a set of basic principles to be applied to federal projects (ENR July 8, p.36). Nevertheless, those principles are not being applied to the great St. Lawrence power and navigation project. There, the power users apparently are going to have to pay nearly all of the costs that ought to be shared jointly by power and navigation interests.

There are two chief reasons for this anomalous situation. First is the complete lack of an orderly approach to development of the international section of the river on the part of our government; and second is the fact that no one of the three federal agencies that agreed on the basic principles is directly involved in building the St. Lawrence project. The power work, which started early in July, is to be done jointly by the Hydro-Electric Power Commission of Ontario and the Power Authority of the State of New York. No one knew until a few days ago who is to build the navigation facilities in the international section. Now it appears probable that the principal ones will be built by the St. Lawrence Seaway Development Corp., a U. S. agency. If so, the Corps of Engineers may supervise construction, but would have no say in how costs of the entire project are to be apportioned. That is up to Congress.

Meanwhile, as power is badly needed in both New York State and in the Province of Ontario, the two power agencies are not wasting time quibbling over questions as to how much of the cost of land and dams might equitably be charged to navigation. They are planning to build and pay for the dams and to share all the cost of compensating the owners of land to be flooded by the dams.

The land area to be flooded in Ontario is large, costing an estimated $73 million. An additional $17 million will be spent for land on the New York side. Navigation interests will benefit from the dams and the vast slack-water pool they will form in flooding these lands. Hence, logically, they should share in the cost. But they will not unless there is a radical change in policy toward the St. Lawrence Seaway. As a result, consumers of the power will pay a considerable subsidy to shippers using the proposed new waterway.

We commend this subject to the Public Works Committees of Congress and the Bureau of the Budget. A change in federal policy could bring an early end to the large outlays for maintenance and operation of inland waterways that Congress has authorized annually for many decades in the past.

Now that both countries have decided to place tolls on ships using the new St. Lawrence canal, those tolls should be truly representative of all costs logically chargeable to navigation. Only in that way can the claimed economies of that navigation facility be demonstrated.

Inland waterways have been pampered and subsidized for too long a time. They now are in their heyday according to the best information we can obtain (ENR Aug. 5, p.34). It is long past time that they should be on their own, with users paying tolls to cover all the costs that now are paid by U. S. taxpayers. The St. Lawrence Seaway would be a good place to start to put the inland waterway systems of this country on a sound business basis.

Better engineering teaching

Beginners in engineering teaching often can qualify as professional engineers, whereas as teachers they are strictly amateurs. Now, New York University announces a unique graduate program that could help balance such a lopsided situation.

The new program combines instruction in educational techniques with advanced engineering study. It is under the joint sponsorship of the university's school of Education and its College of Engineering, each of which will handle about half of the course work.

NYU says the program was developed specifically for teachers in junior colleges and technical institutes. We suggest that the idea be carried further—into the engineering colleges.

Offhand, this program looks like a godsend for floundering young instructors who would like to gain teaching proficiency as well as the degree that comes with advanced study.

But here is the catch. The degree will be Master of Arts, a designation that is honored in local school districts, but which doesn't hold much water in the eyes of engineering educators. These men look for a Master of Science degree after an aspirant's name.

Separate courses in educational techniques impress the engineering faculties even less. Those courses are designed mostly for primary and secondary education, they say. It is entirely possible, however, that the teachers of education could develop useful engineering teaching courses.

The demand for capable engineering instructors is great. Consequently, the deans of our engineering schools should encourage amplification of the NYU plan by universities equipped to train young engineering graduates in teaching methods. A first step would be expressed willingness to honor MA degrees from schools undertaking to provide a service to engineering colleges not provided by the NYU program as now set up.

commercial buildings

Sears Roebuck Store, Compton, California. Architect—Stiles Clements, Los Angeles, Calif.; Contractor—L. E. Dixon Co., San Gabriel, Calif. Pozzolith Ready-Mixed Concrete supplied by S. H. Bacon Materials Co., Huntington Park, Calif.

better quality concrete here with

POZZOLITH*

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Cooper's Department Store, Fresno, California. Architect—Leo Roselyn Co., San Francisco, Calif.; Contractor—Harris Construction Co., Fresno, Calif. Pozzolith Ready-Mixed Concrete supplied by Stewart & Nuss, Inc., Fresno, Calif.

Jacobson's Store, Birmingham, Michigan. Architect—Arthur O. A. Schmidt, Detroit, Mich.; Contractor—E. J. Swink, Birmingham, Mich. Pozzolith Ready-Mixed Concrete supplied by Boice Builders & Supply Co., Pontiac, Mich.

● These stores are representative of many commercial structures where Pozzolith was employed to produce better quality concrete.

The most important basic factor affecting the quality of concrete is the *unit water content* (water required per cubic yard of concrete). See Bureau of Reclamation's current Concrete Manual, Page 130.

Pozzolith, through dispersion of cement, is the key to producing *lowest unit water content*. Thereby it insures reduced shrinkage, low permeability, increased bond to steel and long life.

Investigate the advantages of Pozzolith for your next job . . . it will enable you to obtain the required concrete qualities at lower cost than by any other means.

Full information on Pozzolith and "see-for-yourself" demonstration kit supplied on request.

***POZZOLITH...** reduces unit water content up to 15% for a given placeability, makes available the optimum amount of air in concrete and fully complies with the water-cement ratio law.

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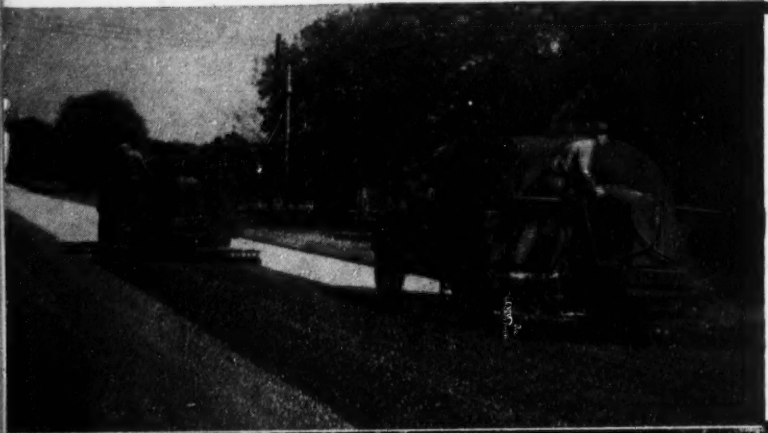
Stage construction .... one of Asphalt's most important contributions to road building

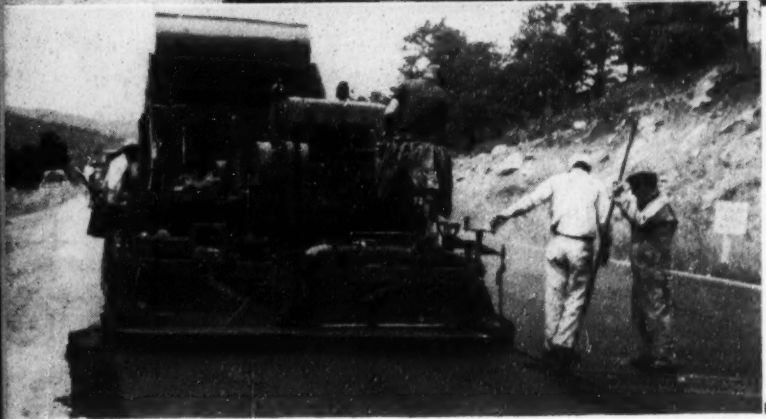


Step #1

When traffic is light, consisting of automobiles and occasional small trucks, a surface-treatment of Texaco Cutback Asphalt, covered with stone chips or other aggregate, provides an adequate road surface. This inexpensive improvement covers the road with an all-weather surface, which is tough, waterproof and dustless.

Step #2

Increased traffic volume, with a larger percentage of trucks, calls for a more durable surface. A low-cost Texaco Asphalt improvement of the Road-mix type is added to the original surface. Local aggregate and a suitable Texaco Cutback Asphalt are mixed thoroughly on the road by power grader. The mix is spread to the desired thickness and compacted. This surface will serve moderately heavy traffic for a number of years with low upkeep.



Step #3

Finally, when volume and weight of traffic call for a heavy-duty pavement, the existing road provides an excellent base for a hot-mix Texaco Asphaltic Concrete wearing surface. Each of the two earlier types of Texaco Asphalt construction, after serving traffic effectively for a number of years as a wearing surface, continues to serve as a component of the final heavy-duty pavement.

Middle photo supplied by J. D. Adams Mfg. Co.

Two helpful booklets which describe all types of Asphalt road and street construction can be secured without obligation by writing our nearest office.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17
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